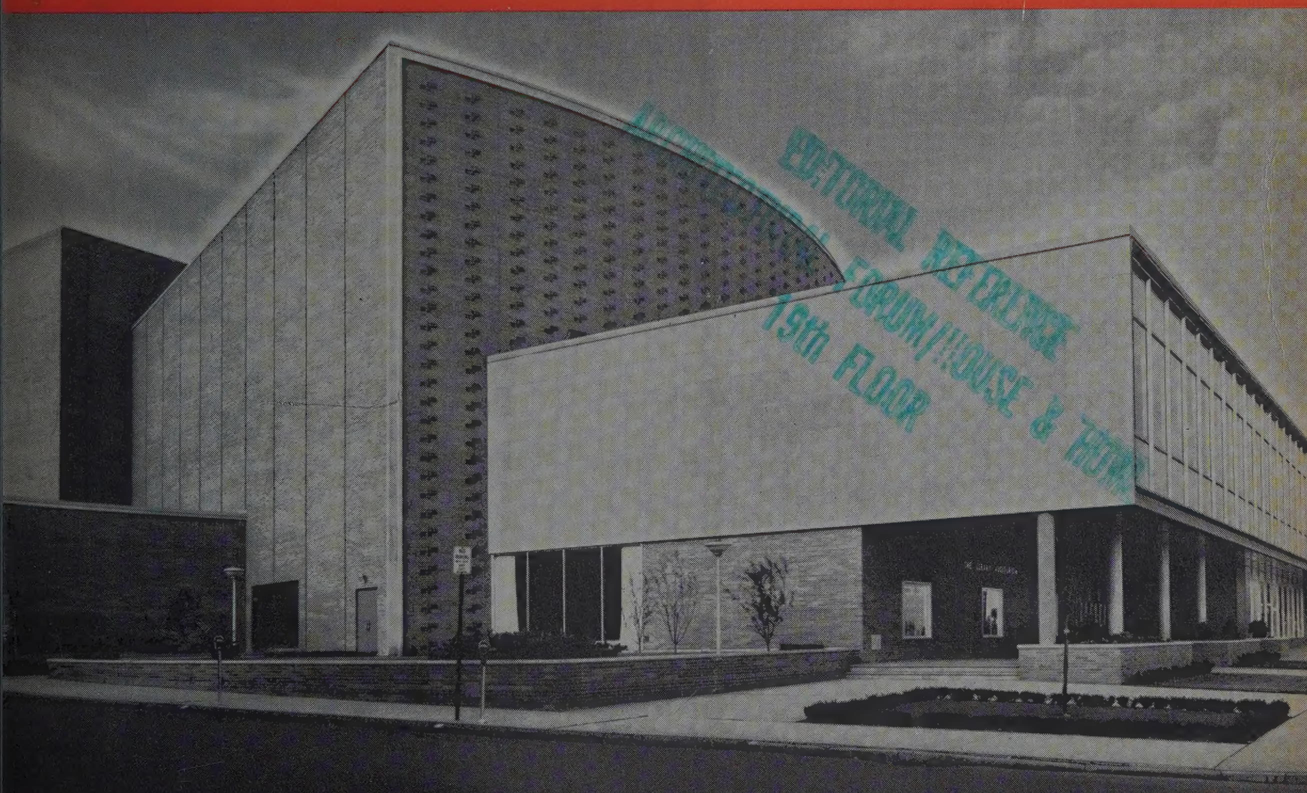
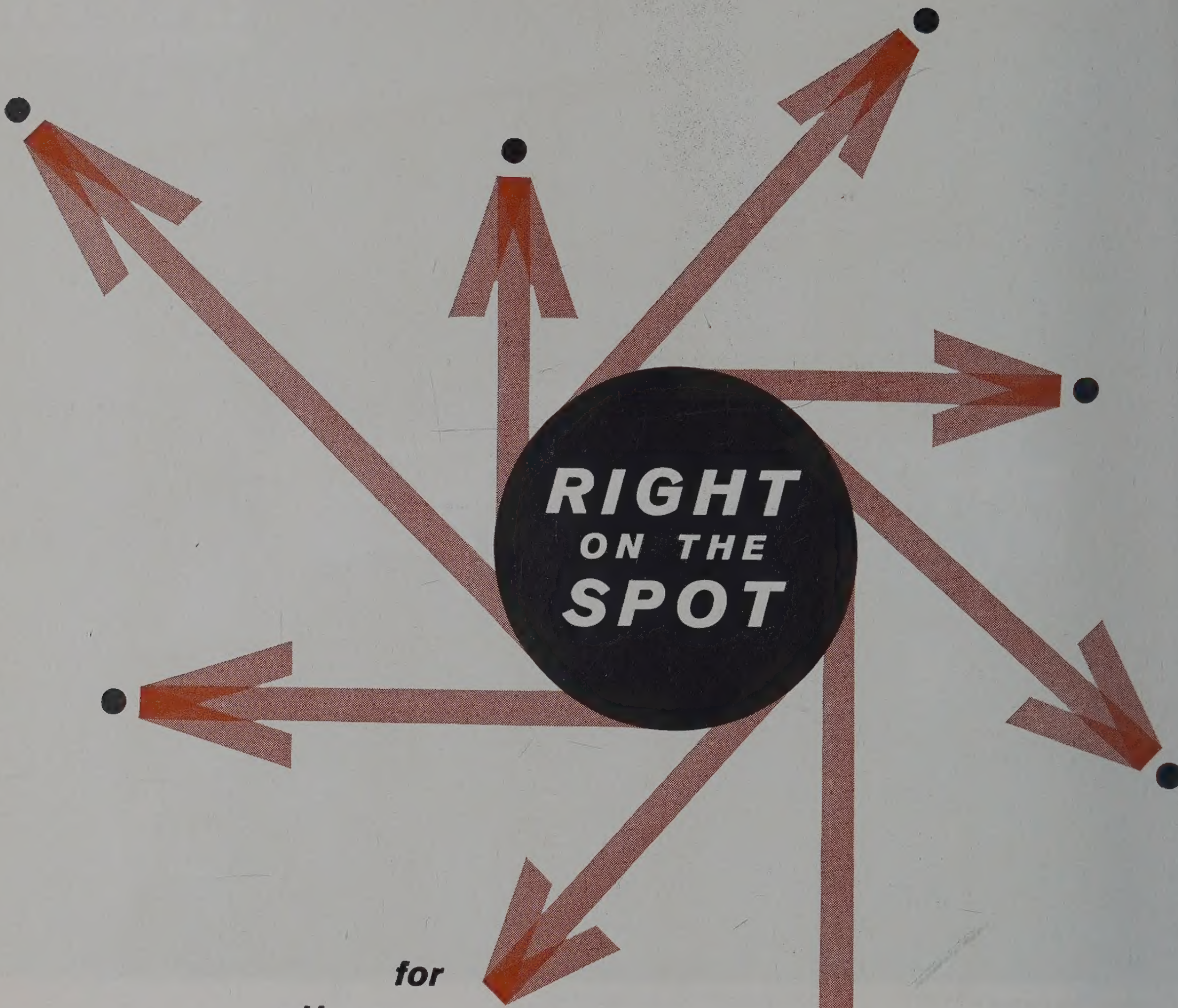
ROYAL ARCHITECTURAL INSTITUTE OF CANADA JOURNAL



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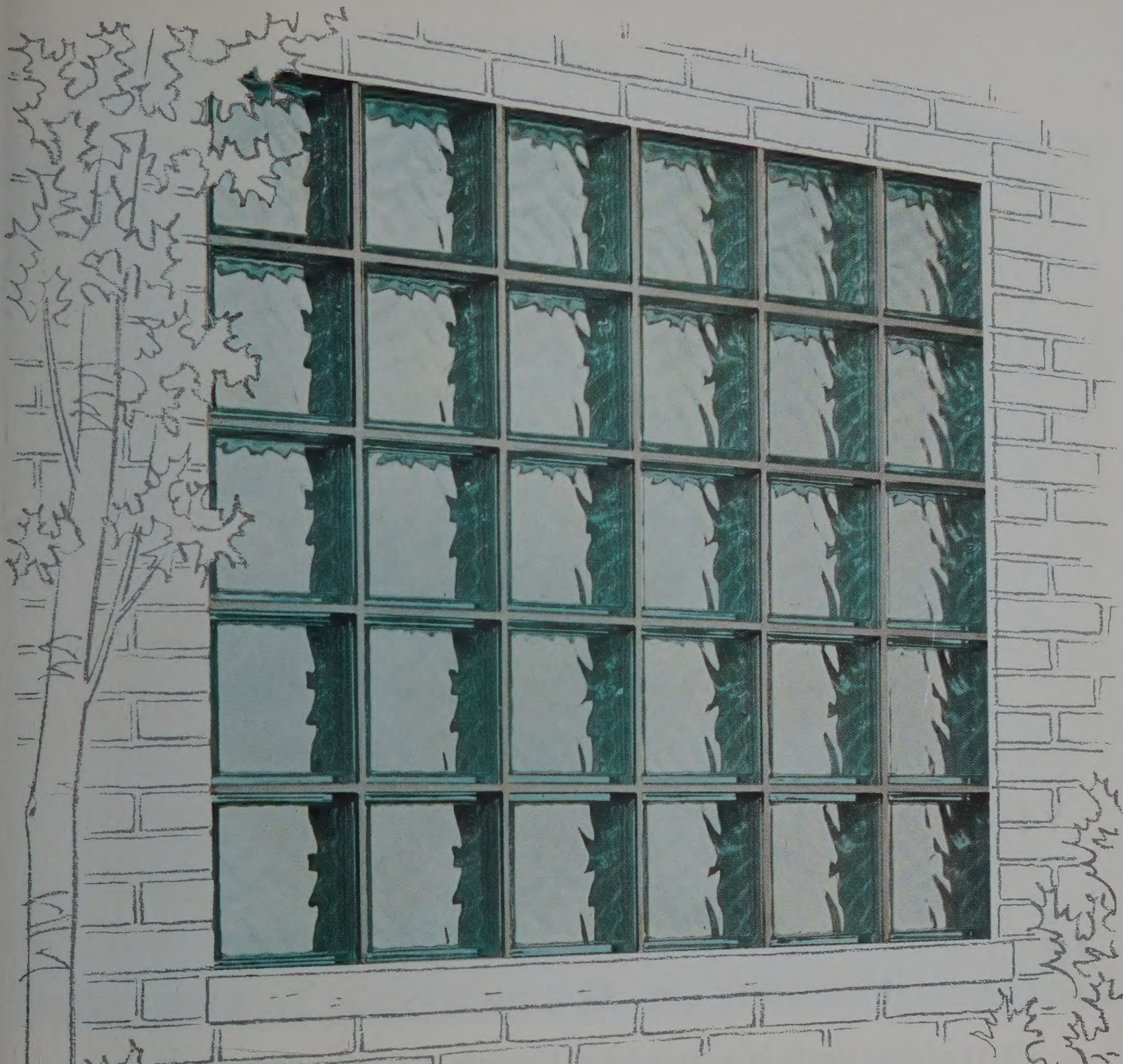
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Aluminum Fabricator: Rosco Metal & Roofing Products Ltd.



Plant & Offices: Built for Air Coils Mfg. Ltd., Oakville, Ont.
By: Model Industrial Developments Ltd.
Aluminum Fabricator: Disher Steel Division of Dominion Structural Steel Ltd.



ace Track Grandstand & Clubhouse: Ontario Jockey Club
Ltd., Malton, Ont.
chitect : Earle C. Morgan
uminum Fabricator & Erector: Robertson-Irwin Ltd.



Harbour Conveyors: National Harbours Board, Laurier Pier, Montreal, Que.
Consulting Engineers: C. D. Howe Co. Ltd.
Aluminum Fabricator & Erector: Westeel Products Ltd.



Plant & Offices: Calumet & Hecla of Canada Ltd., London, Ont.
Consulting Engineers: Smith, Hinchman & Grylls Associates (Canada) Ltd.
Aluminum Fabricator & Erector: Robertson-Irwin Ltd.

LOOK WHAT THEY'RE DOING WITH ALUMINUM

Canadian architects and consulting engineers continue to solve important functional and appearance requirements for building owners by specifying aluminum insulated industrial curtain walls and roofs. Ask them to discuss the many features which make these modern walls *competitive* in first cost and low in *ultimate* cost.

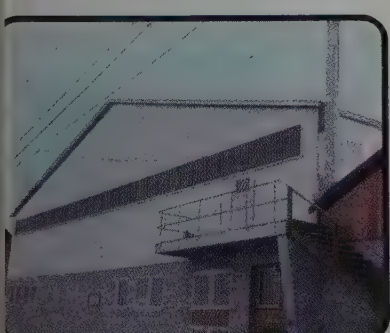
Consult the Canadian aluminum fabricators and erectors of these walls. They can save you money on the total installed costs by capitalizing on aluminum as the most economical of the light, durable architectural metals. Aluminum offers the widest variety of attractive permanent textures and finishes.

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Warehouse: Campbell Soup Co. Ltd., New Toronto, Ont.
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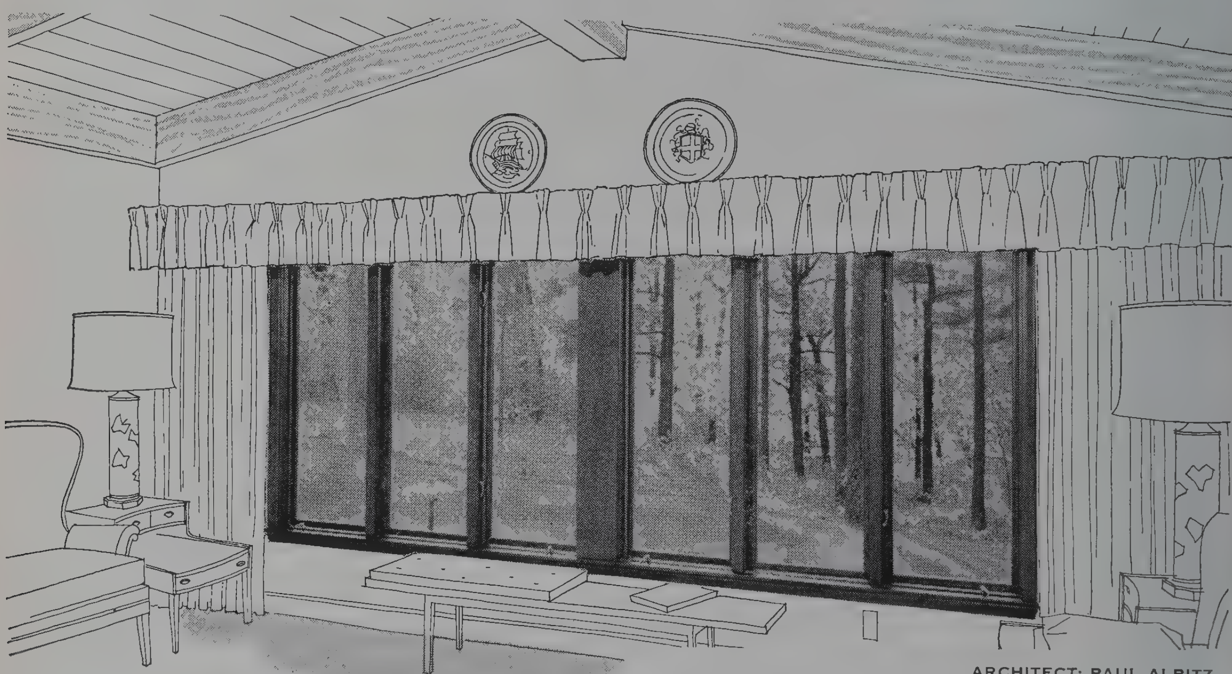
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Clients often have the mistaken idea that windows are pretty much alike. That is, until you tell them about PELLA WOOD CASEMENTS. For, only PELLA offers an inside screen that *rolls up and down!* Besides that, inconspicuous storm sash remain in place the year 'round. After wrestling with conventional screens and storm sash, clients regard these two PELLA features as sheer luxury. Yet, chances are PELLA WOOD CASEMENTS run no more than the windows and equipment you might be using. Countless arrangements are possible with 18 standard ventilating units in up to 68 in. glass height by 24 in. glass width. For complete specifications, contact your nearest Canadian distributor. Consult your classified telephone directory or the list below.



ARCHITECT: PAUL ALBITZ

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Science Building Arts Building Library Building

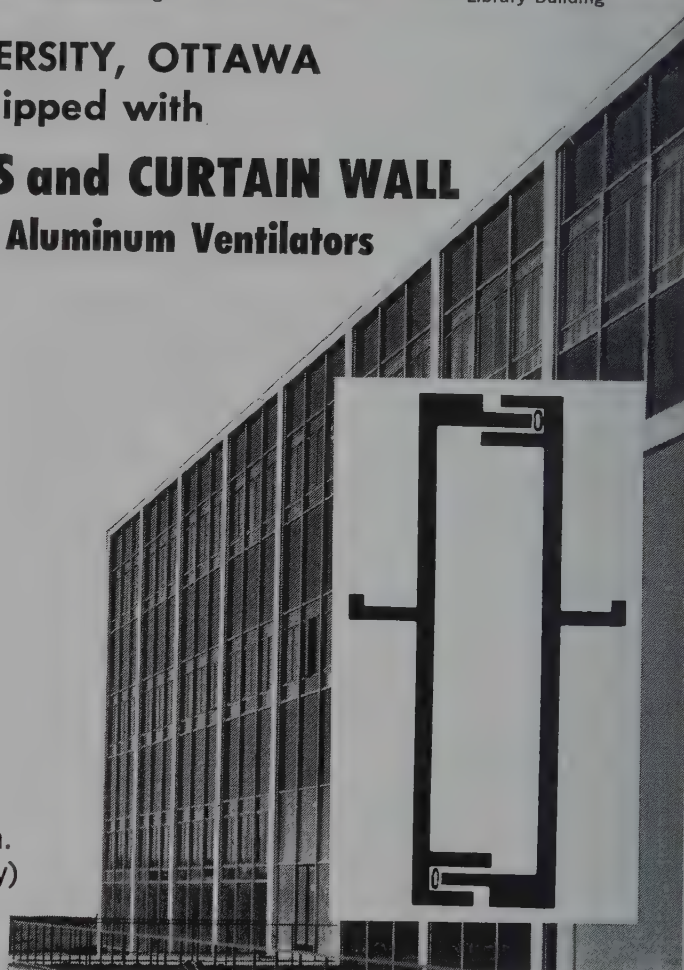
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Science Building Showing Aluminum Curtain Wall

Architects: The Architectural Associates for Carlton University: Watson Balharrie, Hart Massey, Eric Arthur, John Bland, Campbell Merrett

Contractors:

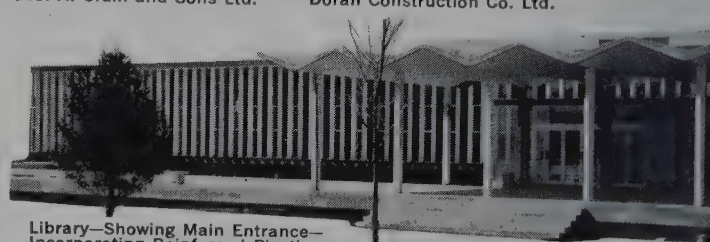
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SPECIAL REPORT...

the revolution in insulating board

What was simply 'insulation, in board form' today has become a product of many and varied uses, through manufacturers' ingenuity

by J. A. Tison

CO-ORDINATOR OF ADVERTISING, ALLIED CHEMICAL CANADA, LTD.



Dramatic new use for "Therm-O-Bar" insulating board: wall planks for striking interior effects.

In the years since the War, the building industry has mushroomed into a multi-billion dollar business. And with this upsurge has come tremendous development of new products within the industry.

But one of the 'old' products, insulating board, has not been replaced by anything new. Rather, it has been rejuvenated.

Why the rejuvenation? Basically it went hand in hand with the building boom. With the tremendous competition among builders, there has developed a need for low cost products requiring minimum application time. Insulating board satisfied that need in that it could be applied more quickly than other types of insulation.

Barrett then added aligning marks to some of these boards which further speeded application. Today, one man can insulate the outside of the average new home, *by himself*, in about 8 hours. Furthermore, the structural strength of Therm-O-Bar* insulating board adds bracing strength when applied to studding. Also, improved manufacturing techniques have greatly increased insulation values.

But perhaps the most important reason for the remarkable increase in its use was that in the face of mounting competition and in the search for new markets, manufacturers turned to their research departments to develop new uses for their insulating board.

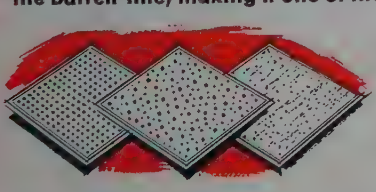
One result is the ceiling tile. It is virtually an homogeneous insulating board, cut to size and then perforated to drink up noise.

More recently we have seen a trend to what we know as Decorative Board. Wall planks, 12 and 16 inches wide now offer builders, architects

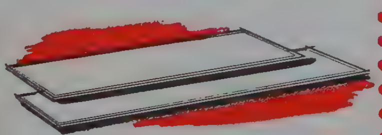
continued...

new products

Allied Chemical Canada, Ltd. recently announced the addition of two new product categories to the Barrett line, making it one of the most extensive and complete.



Barrett "Therm-O-Bar" Ceiling Tiles. Available Plain, Fissured or with Regular, Scatter and True Random perforations. Tongue & Groove, and Butt edges. In Decorator White (a double coat of flame resistant, damp-washable paint). Standard size (12″ x 12″) and specialty sizes.



"Therm-O-Bar" Wall Planks & Panels. A new decorative wall board that is in itself, effective insulation. *Planks* available in 12″ & 16″ widths, 8′, 9′ lengths, ½″ thick. In both single coat Base White and Double Coated Decorator White. *Panels* in 4′ widths, 7′, 8′, 9′, 10′ lengths, ½″ thick.

revolution...

and homeowners the opportunity to achieve more pleasing decorative effects, and at the same time, to insulate.

Today, our "THERM-O-BAR" line of decorative planks and panels have found widespread use. Everything from elegant homes, to cafés, restaurants, clubs and schools use them extensively. The do-it-yourselfer uses them to finish off basements, attics, even to give rooms a new look.



Laminated "Therm-O-Bar" sheathing offers unmatched weatherproofness, structural strength and insulating value.

Indications are that this revolution has just begun. As competition gets keener, as research budgets are increased, many more new uses for the old 'insulation, in board form' are bound to be found. We ourselves are looking at many exciting possibilities.

But one thing is sure, retailers and builders will continue to find it pays to stock and use board insulation.



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The adaptability of concrete to simple, dignified, and the classic lines of a structure, quietly subordinated to its purpose of worship; and the economy; durability and fire safety of this material – these are among the reasons why some of the most beautiful modern churches are built in concrete, made with Canada Cement.

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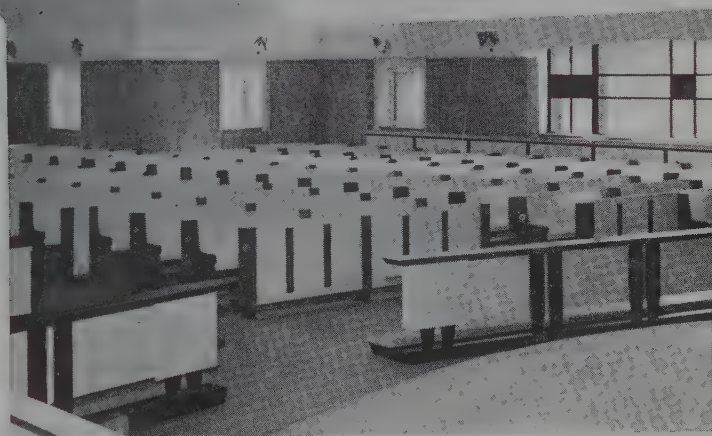
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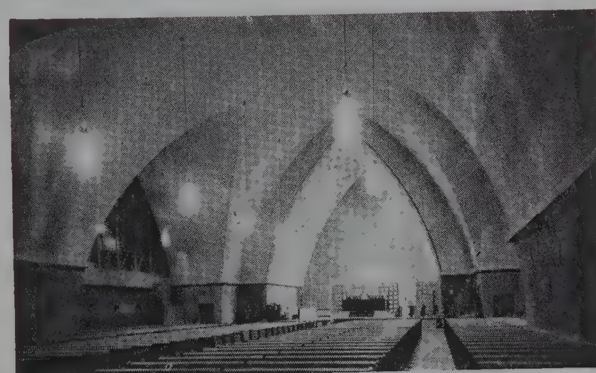
CANADA BUILDS WITH CANADA CEMENT

(Centre illustration)
ST. BERNARDIN DE SIENNE CHURCH, Ville St. Michel, Que.
ARCHITECTS: Duplessis, Labelle & Derome.
CONSULTING ENGINEERS:
Beaulieu, Trudeau, Dubuc, Lalancette & Beaulieu.
GENERAL CONTRACTOR: J. H. Dupuis Ltée.

(Bottom illustration)
ST. THOMAS D'AQUIN CHURCH, St. Foy, Que.
ARCHITECT: Philippe Côté.
CONSULTING ENGINEER: Pierre Warren.
GENERAL CONTRACTOR: Emile Frenette Ltée.



ST. EMILE CHURCH, Montreal.
ARCHITECT: Robillard, Jetté, Beaudouin.
CONSULTING ENGINEERS: Beaulieu, Trudeau, Dubuc, Lalancette & Beaulieu.
CONTRACTOR: J. H. Dupuis Ltée.

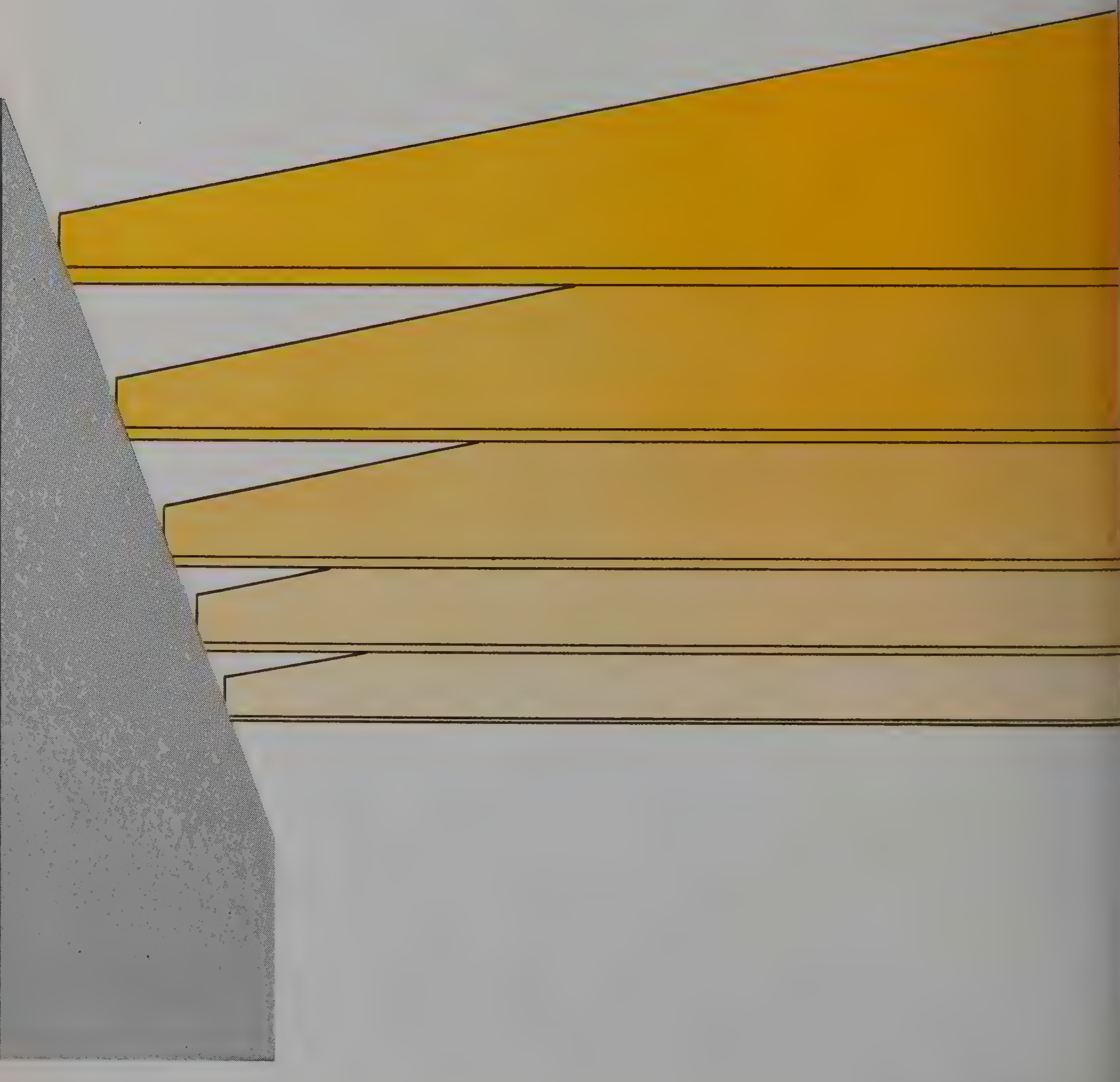








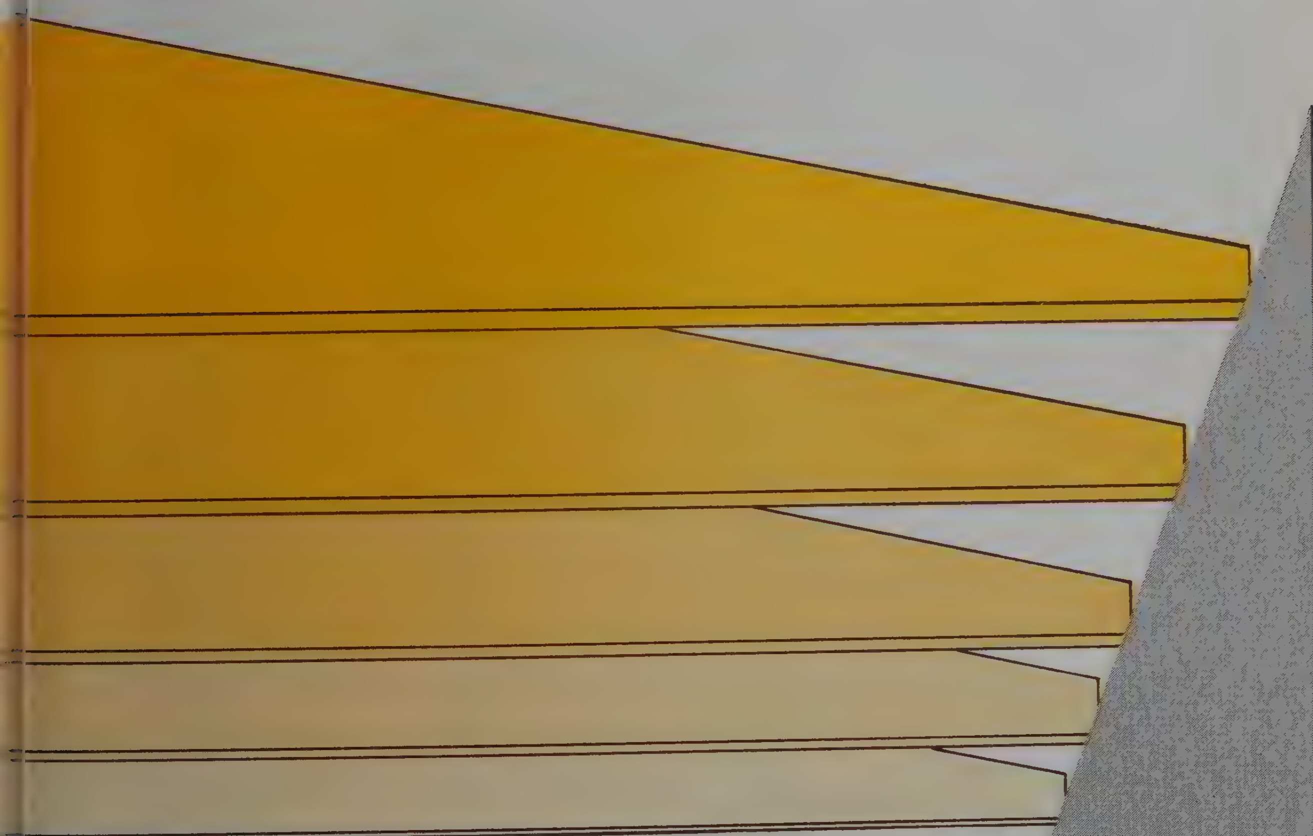

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This is one of the many stimulating ideas emanating from the plywood industry. It is a good practice to discuss plywood with our nearest Field Office, or the headquarters in Vancouver. Our technical knowledge and information are sure to be useful.



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NICKEL STAINLESS STEEL

curtain walls insure lasting beauty, low cost maintenance and long life of new

UNION CARBIDE

HEAD OFFICE BUILDING

Look at the striking architectural effects achieved through the use of nickel stainless steel curtain walls for the new head office building of Union Carbide Canada Limited in Toronto.

Beauty is just one of the reasons for the use of nickel stainless steel in modern architectural applications. There are others: nickel stainless steel provides excellent resistance to weather and corrosive effects of city atmospheric conditions; it is strong and durable—withstands severe abuse, won't crack, chip, pit or deteriorate with aging; it has a smooth hard surface that tends to wash clean in every rainfall—never needs painting, polishing, waxing or special cleaning techniques.

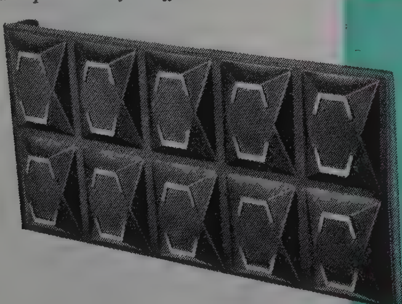
Nickel stainless steel has a rich silvery lustre that harmonizes beautifully with wood, glass and enamelled surfaces; it can be produced in an infinite variety of patterns and finished in attractive colours.

Nickel helps give stainless steel its extra strength and resistance to corrosion—makes it easier to form and fabricate. That's why more and more Canadian architects are specifying nickel stainless steel curtain walls for strength and lasting beauty.



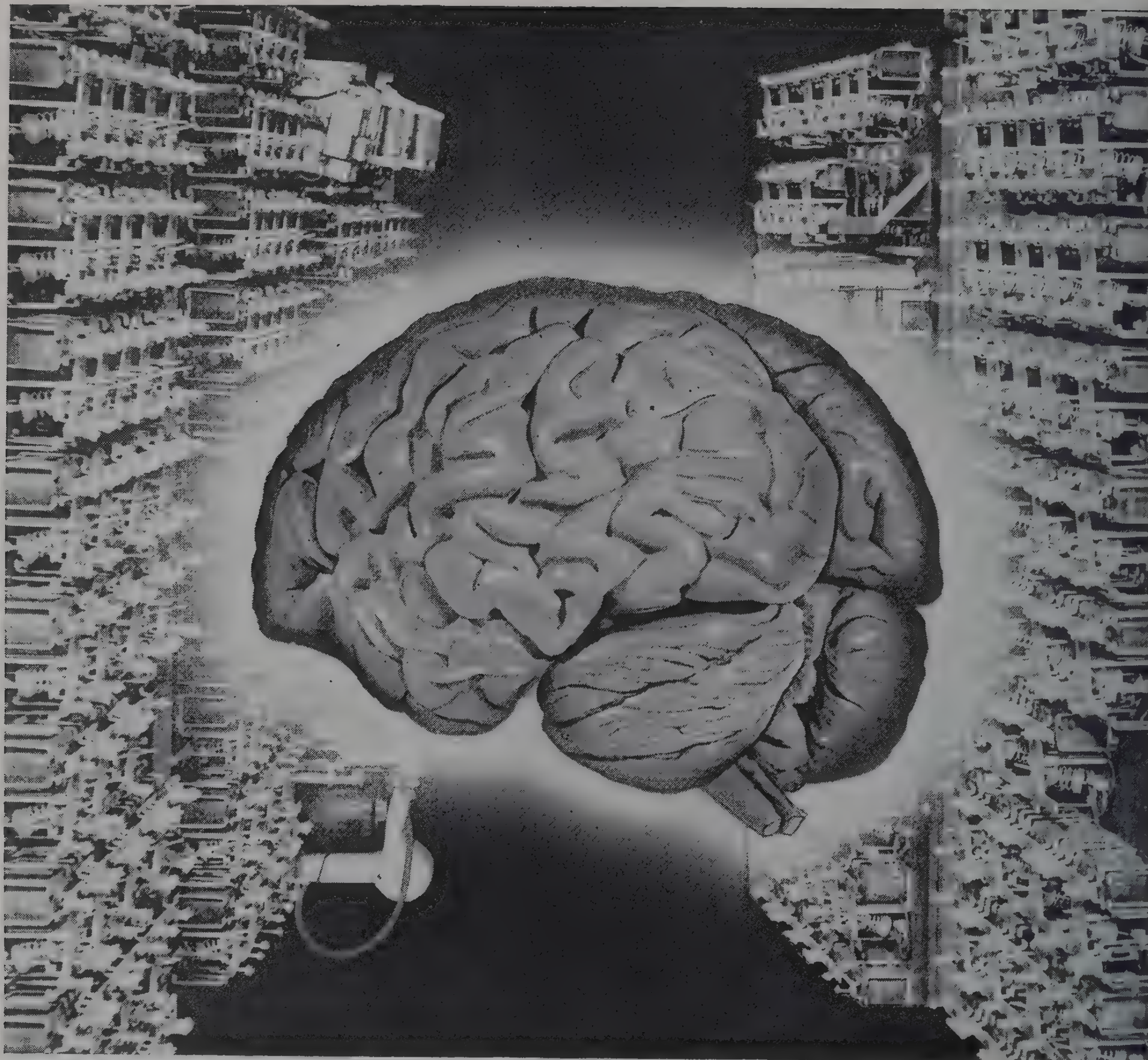
Architects: Shore and Moffat
Fabricator: Macotta Company of Canada Limited

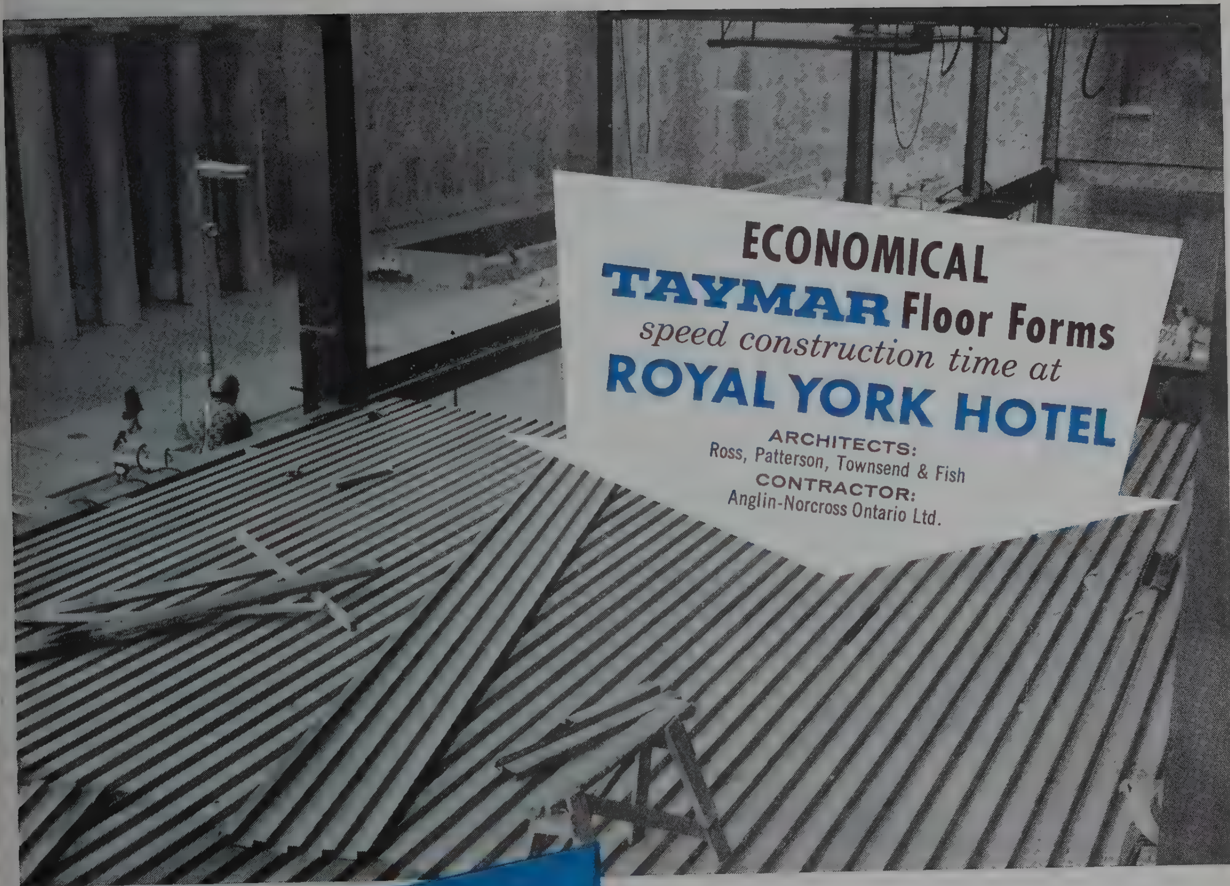
Below: Section of nickel stainless steel spandrel panel of new Union Carbide Building. Panel was formed, coated with emlon acrylic paint and polished by Moffats Ltd.



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TAYMAR panels join together quickly and conveniently, and are in immediate use to support equipment and construction crew. In the job shown here, 20 gauge TAYMAR Floor Forms served as a rugged base for pouring concrete slabs, over a 300,000 square foot area.

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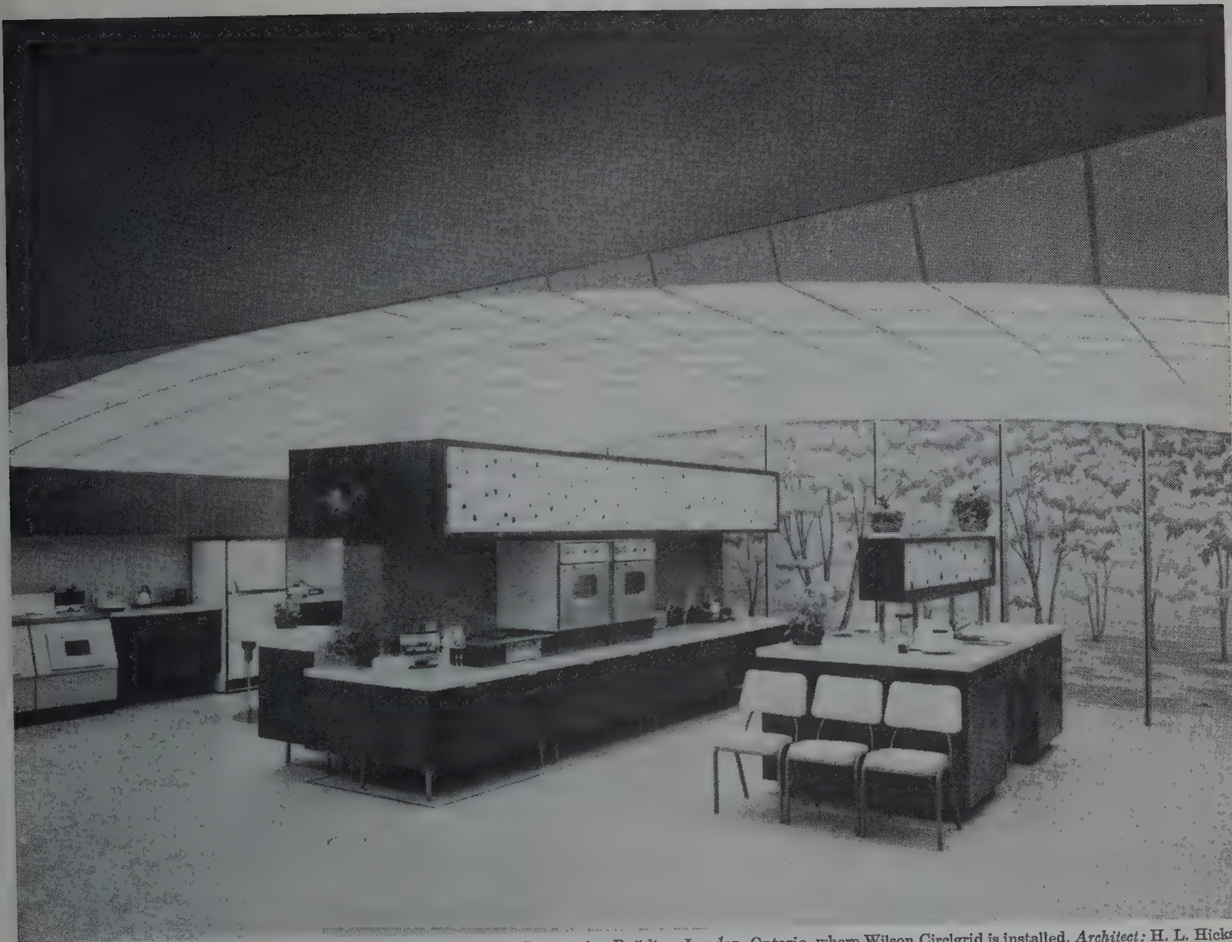
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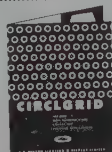
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Other members of the Structural Steel Division of Canada Iron supplying Taymar products: C. W. Carry Ltd., Edmonton
Calgary Structural Steel Ltd., Calgary
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It's versatility, not magic, that Northern Electric has built into this intercom telephone. Through advanced research and technology, this one phone does what 3 or 4 standard phones could never do. It lets you:
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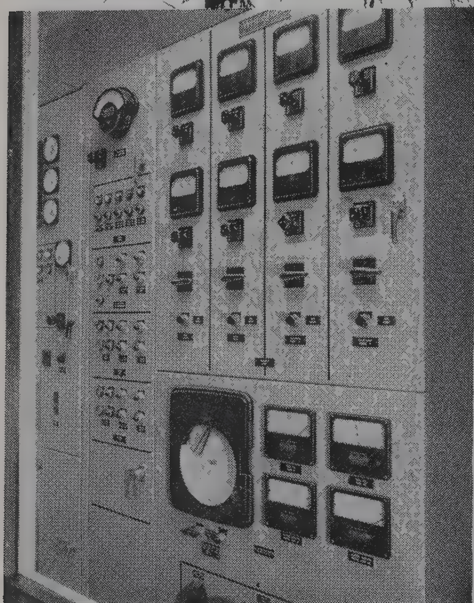


Interior of Public Utilities Commission Building, London, Ontario, where Wilson Circlgrid is installed. *Architect:* H. L. Hicks.

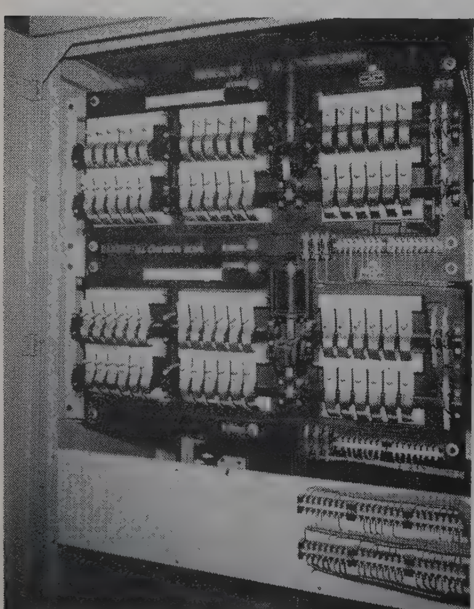


A complete telephone system with . . .





The Supervisory Control panel, looking from the Diesel Generator room, through the triple glass window into the control room. The panel provides remote control of the switchboard located in the basement below.



The inside of the automatic transfer Switchboard gives an idea of the extremely complex engineering and skilful wiring needed on a control switchboard of this type. Switchboards are applicable to specific switching problems like this, as well as to general building circuit control.

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BY THIS
UNIQUE SWITCHBOARD!

Custom-designed for the Bell Telephone Company, this low-voltage Switchboard transfers the power supply for the telephone system from hydro to *auxiliary diesel power* —when required.

A team of experienced engineers from Canadian Westinghouse designed and built this unique transfer Switchboard and remote control panel.

Behind each Westinghouse Switchboard now at work in schools, hospitals and industrial buildings are the same Westinghouse engineers and proven Westinghouse components.

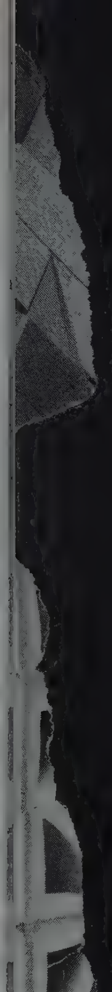
And they're ready to help solve your power problems. For full information on Westinghouse custom-designed, low-voltage Switchboards, contact your nearest Westinghouse Sales Office. Or write to Canadian Westinghouse Company Limited, District Manufacturing and Repair Division, P.O. Box 4, Toronto 18, Canada.

Consulting Engineers: Karel Rybka & Associates Ltd., Toronto.
Electrical Contractor: Standard Electric Company Ltd., Toronto.

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Westinghouse

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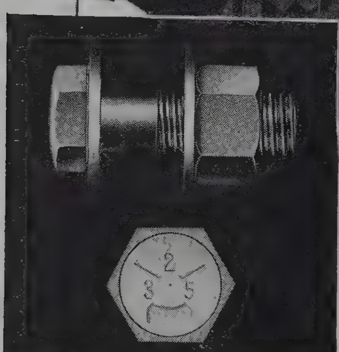


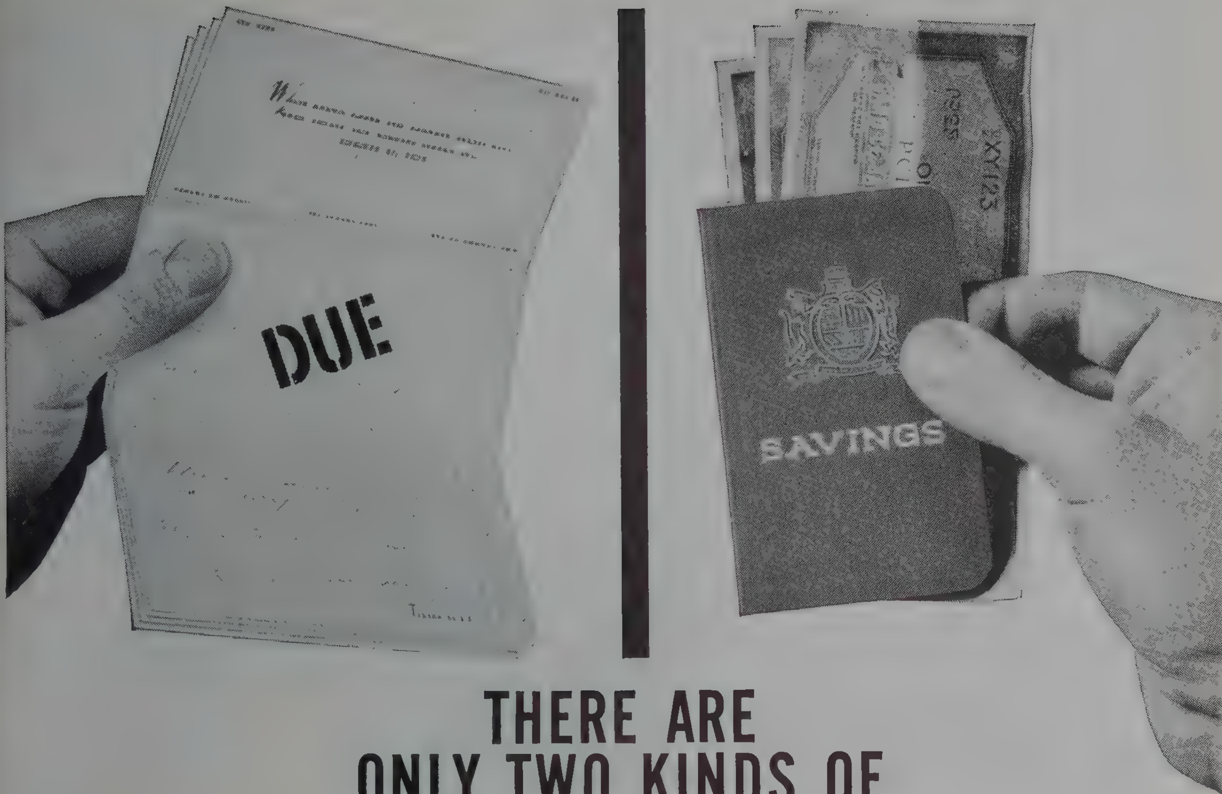
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THE KIND THAT COSTS AND COSTS AND COSTS

This is the insulation that as time goes by, loses its insulating effectiveness because it absorbs an increasing amount of moisture. As it loses its effectiveness, costs of maintaining desired temperatures slowly rise.

AND THE KIND THAT PAYS

This is Styrolite—with an exceptionally low factor of water absorption and permeability. Because of these the K factor of Styrolite (0.215 - 0.230) remains low permanently. Styrolite has many applications as perimeter insulation, for walls and floors. For a low temperature insulation that pays in continued efficiency recommend and install Styrolite

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Wide open spaces...

You get space, speed, flexibility and economy with steel construction—all were achieved in the Great West Life Assurance Company's new head office building in Winnipeg.

The use of long span steel beam construction gave large column free areas and allowed maximum flexibility of interior partitioning. Future changes in office and space requirements can be easily accommodated.

In addition, openings in the beam webs provided for passage of electrical, plumbing and heating facilities beneath the floor—without adding to the building's overall height. Every inch saved in height meant significant dollar savings.

All the steelwork was erected during three months of bitter winter weather. This enabled the sub-trades to move in on time to complete their work.

Architects: Marani & Morris of Toronto and Moody Moore and Partners of Winnipeg. Consulting engineers on structural design: Wallace, Carruthers & Associates of Toronto. Contractor: G. A. Baert Construction Co. Ltd.

1800 tons of steelwork, fabricated and erected by Dominion Bridge, Winnipeg. Most of this was of "rigid frame" design.

Easier and more economical installation of piping was made possible by openings cut in webs of beams.



39

structural steel by

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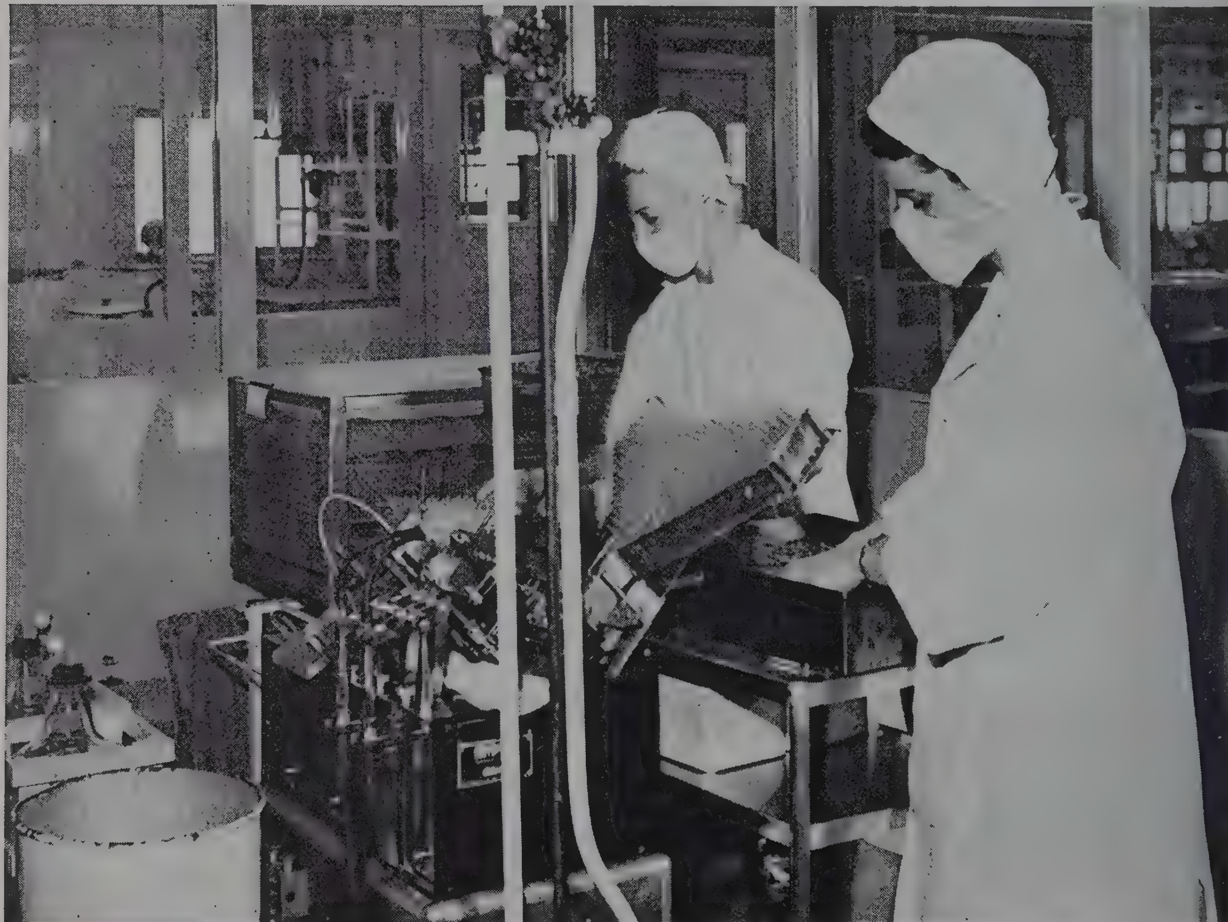


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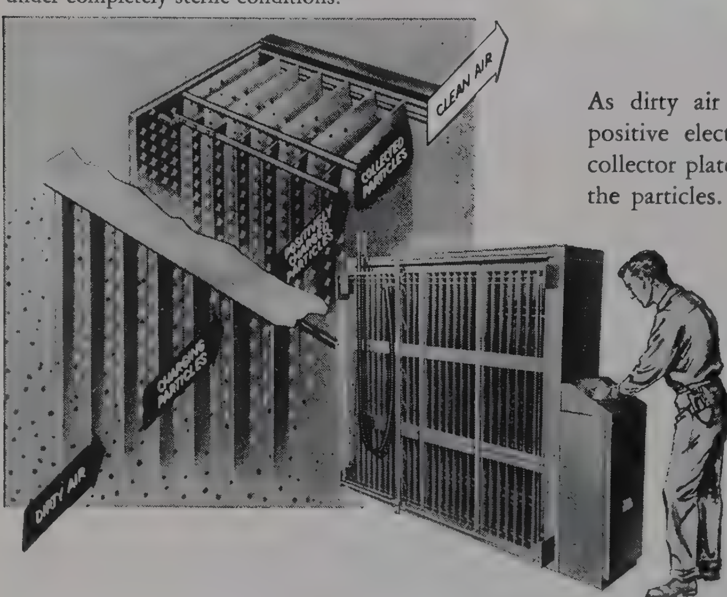
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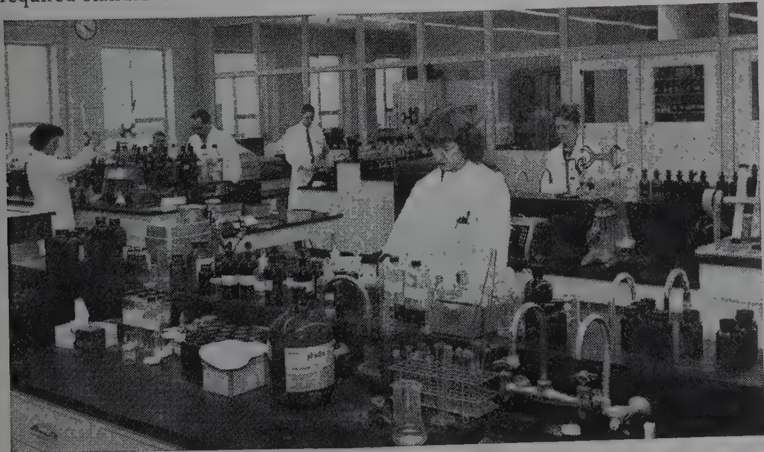
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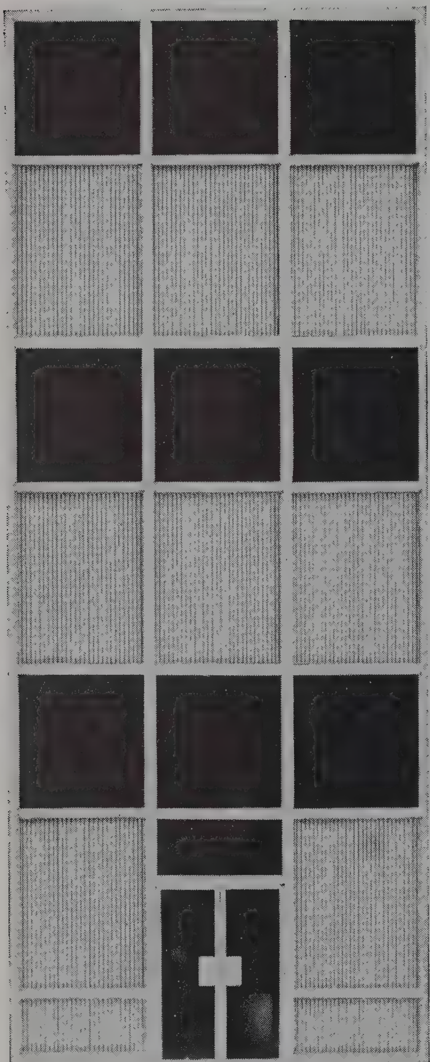
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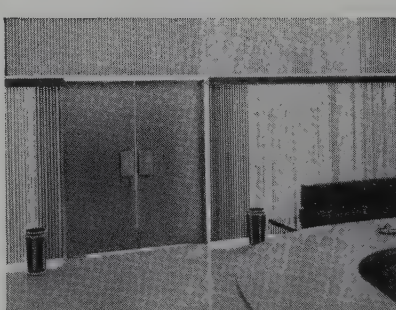


Flexalum

louvred window coverings match architectural trends in style and practicality

For years, the louvred blind principle pioneered by Flexalum, has been the most practical form of interior window covering for commercial applications. So that style would keep pace with practicality, Flexalum has developed new directions in louvred treatments. On this page are just a few examples of how Flexalum Verticals combine handsome, contemporary appearance with the utility of venetian blinds.

Flexalum





Above: Drawn like draperies, tilted like blinds, Flexalum Verticals let the architect follow through the broad sweep of upright structural lines with matching window decoration.

Centre: Unmatched for light control, ease of operation and long, trouble-free life, Flexalum Verticals here provide soft light while removing that "glassed in" feeling from the entrance lobby of a commercial building.

Right: Flexalum Verticals dress up a reception area with drape-like attractiveness. Available in a large selection of both gloss and mat finishes, in plain shades and tasteful contemporary patterns.

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Viewpoint

"Is the apprenticeship or articled student system of training any longer an adequate preparation for entry into the profession?"

YES, IN THEORY. The articled student is one who is filled by a burning desire to become a member of the profession. To this end he is willing to spend seven long, lonesome years of intensive study, without the stimuli of architectural comradeship or personal contact with his teacher. During this time the articled student acquires the same knowledge that his university counterpart does. The former works all day in an architect's office and spends his evenings studying, 12 months a year, and the latter studies day and night for 7 months a year and spends the remaining 5 months working days and relaxing in his off hours.

While I believe the apprenticeship system could train a student, I also believe that our society is against such an approach. Examine the two roads. It is a rare individual today, however dedicated he may be, who can ignore the multitude of recreational diversions offered him (no – pushed on him) day in and day out, and remain steadfastly on his course. It is asking too much of a person to expect him to earn his $3,000 to $4,000 a year as a draftsman and resist the temptation of acquiring such varied assets as a wife, a home, a car, along with the many strictly social status objects. Once having tasted the fruits of his labor by these acquisitions, he must take time to enjoy them; while enjoying them he must increase his income to support them; while working harder and longer it becomes increasingly difficult to spend his evenings and weekends studying. It becomes more attractive to him to sacrifice his study time in favor of increasing his income. The struggle between short term material gain and long term professional achievement becomes enormously one-sided. Chances are that he will capitulate. Having struggled with his burning desire of becoming an architect for a couple of years, the fire cools, and he will give the whole project up as being just too demanding, too self-sacrificing.

Suppose the same student, on gaining his senior matric, entered a School of Architecture. In the competitive atmosphere of 40 fellow aspirants he strives to master each subject each year. The deadlines are known and the push is ever present. He works long and hard during the fall, winter, and early spring months, writes his exams and then, like water piling up behind a dam and suddenly breaking through the restriction from the pressure, is released. He works in an architectural office, earns almost as much per week as he would if he were a draftsman, and is able to finance a major share of his next year's fee. The summer months provide that essential change of pace, of scenery, of activity, that enables him to look forward with fresh eagerness to another term at school. This alternating pleasure-pressure phase makes him want to carry on through the course. He enjoys both the satisfaction of achieving his degree and of maintaining a financial growth (albeit on a lower level) parallel to his working friends.

Technically, then, the apprenticeship training system could produce architects equal in ability to their university educated counterparts, but physically it is both impractical and unreasonable.

D. G. Hallford, Toronto

ARCHITECTURE, WHICH ONCE RELIED SOLELY upon the office of the architect, the master builder, for its future, is turning more and more towards the universities for its needs. Our giants of architecture today – Gropius, Mies, Belluschi, are all products of the new age of technology. The Sullivans and Wrights are passing from the scene.

Architects are becoming specialists, advancing into the technical field. Buildings are no longer simple structures. Elaborate air-conditioning, technical methods of construction, the thin-shell concrete, the lift slab, the longer span, are commonplace in today's construction. This is knowledge which cannot be passed on successfully in a draughting room. It needs the university classroom with its trained professional teachers.

Certainly there are a few individual architects who are capable of maintaining the apprentice method of architectural training, but by and large, the complete overall training acceptable to architectural firms and the architectural associations is now gained in the university.

The articled student and apprentice is fast departing from the architect's office because of the opportunity of gaining the required education in a shorter period of time at the university.

In all fields it is becoming necessary to have a university degree as a prerequisite and since the last war, it has become economically possible for most students who want university training, to obtain it. In the legal and medical professions, one is not allowed to practice until successfully completing university and serving a period of internship or indenture under qualified members of the profession. Why not architecture? Have we not as much responsibility to the people that we should make certain our members are well qualified?

Although the system of training has become outmoded, the articled student or apprentice still exists in the architectural field. There are those with the incentive and ability who find the means to attend university and obtain their degree. The remainder now assume the role of draughtsmen. The office set-up today is such that he is hired to do the work once done by the articled student or apprentice, and the office system has become too complex for the apprentice to receive the attention and guidance he needs. The draughtsmen seemingly have no desire to improve their status, and although reach a certain degree of skill and proficiency in their work, look only to their remuneration for their incentive. There have been a few isolated cases that have indicated their desire to study while they work, thus carrying on the student apprentice system, but the response is in the minority. Whether the articled student or apprentice system is an adequate preparation, except for those few, definitely no. The student will follow the pattern of his

employer, and good and bad habits will be copied.

Design, the one subject taught to advantage in the university classroom is sadly lacking to those students studying under the apprentice scheme. There are a few cases where a talented draughtsman, because of financial difficulties, is unable to attend university. It is for him that the articled student or apprentice scheme would best be served, which will give him the means to enter the ranks of the professional architect. As a final thought, the profession may benefit as a whole by financing these talented draughtsmen in a university training in architecture.

Lester J. Page, Halifax

ONE OF THE DIFFICULTIES seems to be that few offices are staffed and equipped so as to be capable of taking in a student and turning him out, in any number of years, completely versed and educated in all the facets of architecture. These subjects should include history of painting, history of sculpture and history of architecture, both traditional and modern. It is true that with a student of sufficient aptitude these subjects can be self-taught but who is to judge how well they are retained or inculcated in his education. It would seem that a very small minority of offices can or will teach the theory of structural design including graphic statics and stress diagrams. Again the question comes up of how the student's knowledge of these subjects will be assessed. The same criticism applies to the design of mechanical and electrical layouts which are now phases of a complete project usually handled by specialists.

Then there is the question of drawing – just plain drawing. Who will teach a beginner to put down on paper what he sees in his mind? We can assume a certain amount of natural ability but who will show him the intricacies of the various media – pencil, pen and ink, water-color and so forth together with the various techniques. It is a high class man who can work in all these forms of presentation and the probability is that he just hasn't the time for teaching. It is possible that some training in an art school would be an advantage for the student, as criticism is most necessary in the development of style.

This brings up the question of presentation and how is our beginner to be taught the necessary descriptive geometry to properly follow a course of shades and shadows, and determine or point out the best lighting and emphasis for the project. How is the beginner to be taught the several methods of laying out a perspective? Actually, the question is, what office has the time to spare to properly teach these very important phases of sketches.

All these are fringe subjects of the really crucial one. How is a student in an office to be taught and to learn the theories of design and their application in practise? To be a designer means one must have a trained and disciplined imagination, capable of assessing the problems to be solved and able to proceed with a logical solution of those problems. That solution means a plan that works, and elevations that express the plan and the function of the building. Such a solution is the result of much study to find not just a solution but the best possible one. The theory of design cannot, in my estimation, be adequately taught in an office, as it is and has to be the subject of intensive study properly guided and controlled.

A student would have to do all his reading on the humanities outside of the office and that would be a goodly stint of work in itself, but is necessary and must be done to round out his education.

A good office can turn out a good draughtsman – he must learn to be or he won't be employed very long. But a good draughtsman is a far cry from being an architect, which seems to indicate that the answer to the original topic question, in this day and age, is an unqualified "no".

But the converse is not necessarily so either. Our universities cannot turn out properly qualified architects no matter what grades they make in all the subjects of the curriculum. These graduates must have practical experience in an office to round out their academic training. And with some this latter may be a shattering experience, but those who survive will have learned the true meaning of architecture, that is, the art of building beautifully.

William R. Souter, Hamilton

THE MCMORRAN REPORT on Architectural Educational Training and Qualifications which was submitted to the RIBA in 1953, acknowledged that one third of the entrants into the profession worked in offices and acquired their training on a part-time, day or evening, basis. While the Report recommended that all future architects should be trained in recognised architectural schools, it accepted the status of the independent student, providing his studies were closely related to those offered by recognised schools. In Canada, the situation is better, for a potential architect is normally required to undergo at least three years training at an architectural school before he can article himself to an established architect.

Today, apprenticeship training is an anachronism. It originated before the existence of architectural schools. Later, however, European academies absorbed the system when they trained their pupil-architects under a recognised master or masters. The articled system still survived independently and it had its advantages in that both master and apprentice worked in close conjunction with each other on designs and working drawings, and both were associated directly in office administration, and with the clients. Unfortunately, pupil architects were also subjected to the extremes of favouritism or exploitation at the hand of their employers.

Nevertheless, they were certainly far more cogniscent with the business of architecture than their later university trained counterparts. This was the greatest advantage which the apprenticeship system offered.

Apprentice training met professional requirements but it did result in sterile architectural design, for few apprentice-architects ever experienced a comprehensive philosophy of architectural design, and they were usually

incapable of producing buildings of quality, although there were glorious exceptions. After 1930, the great Western architectural institutes and schools superseded the role of the academies when their teachers developed a coherent architectural philosophy, although, it must be admitted that they have retrogressed pathetically since.

Design theory is essential in architectural training and whether institutions teach it well or badly should not effect the issue. These offer the only integrated method of teaching an effective design philosophy, which can rarely be learnt by the average man in the average office. Although architectural schools offer five years of training, the profession also requires a period of practical experience before registration. But even this training is acknowledged to be too short, too superficial and too unbalanced by architects who also feel that architectural education is poor in quality and concept, when compared to that of the other professions.

These critics point out that few schools have a design philosophy and that which they possess is eclecticised from the work of established masters or so called masters. They tend to forget that the university training is designed to provide an education as distinct from a professional qualification. Nevertheless, both the apprenticeship and institutional systems of training are no longer completely adequate preparations for entry into architecture.

The answer obviously lies in developing a new system which must offer the future architect an education which will impart knowledge and create a respect for knowledge within prescribed time limitations. Perhaps this might be resolved by the development of discipline offering greater architectural specialisations, as are now provided in Communist universities.

It may be even more important, however, to smash the gulf between the builder and the architect, for the one specialist is professionally trained, while the other occupies the inferior status of a manager-tradesman. When the builder is professionally educated and assumes his justified role within the profession, as is now envisualized in the United Kingdom and as it operates in the Communist bloc – then many educational problems will be resolved. Only then will the student architect be able to gain effective practical experience on the site and in office. Standards will improve in building and design, for both building specialists will be offering the public their services with integrity and will be mutually creative in an operative partnership. The training of the student on the building site, as well as in the lecture hall and the studio, will result in the evolution of vital and dynamic design philosophies and the advantages of the apprenticeship system and the academic discipline will become essential characteristics of the new training techniques.

M. Hugo-Brunt, Toronto

RIBA Journal Reviews Report RAIC Committee of Inquiry into Urban Environment

This comparatively short report is one of the most concentrated your reviewer has read. In some 200 concise paragraphs it covers the whole of the Canadian housing scene in a series of statements and conclusions; the latter in the form of recommendations. These recommendations amount to a housing policy, in a context very different from our own. The problem is somewhat similar, but the solution has so far eluded the eye of government. The architects have stepped in to point a direction which, however broadly stated, provides a solidly constructive programme. It appears not to invite a vast system of government subsidy, but rather to suggest an over-riding system of controls which would ensure consistency as opposed to standardisation; advice and guidance rather than bureaucratic direction.

The presentation of this document relies mainly upon text. There are a few isotypes and some pertinent schedules, but no plans or diagrams. The object is to impress a nation with the need for a basic aim, which might possibly result later in more detailed manuals, but which at the present is devoted to calling Canada's attention to the need for an overall view; to the end that housing can be sociologically well distributed, both geographically and within the domestic environment.

In reading the first pages of the report a feeling is engendered that one has heard all this before. But the further the report proceeds the clearer is the conviction that Canada has, first, a housing problem of as great a proportion, relatively, as was our own in 1945, and moreover that this problem needs a Canadian solution.

One-third of the urban community of Canada is involved. This section has received a terrifying helping of grant-aided post-war housing on the most up-to-date lines: bungalows for one-level working, detached units for privacy, open plans for modernity, and three-bedroom accommodation for average demand. This imposition by the speculator, with government grants for encouragement, has resulted in bungalows for sameness, detached units for unneighbourliness, open plans for inconvenient living, and three-bedroom accommodation for unimaginative planning. The people who, throughout Canada, have responded to the questions asked as to the success of post-war housing provision have answered with an 'aesthetic despair' which the RAIC has pin-pointed, and to which it has given expression in this admirable and enterprising report.

The RAIC suggests a remedy under the following headings:

Dwelling design:

1. That permits for dwellings at municipal level should require full visual exhibit.
2. That Federal and lending authorities should insist upon quality and variety in accommodation.

Site selection and community planning:

1. That generally there should be a co-ordination of Federal development policies and the preparation of regional plans.
2. That local chapters should offer sketches for layout of public sites in new neighbourhoods.
3. That cities should be given powers to buy land.

In addition there are recommendations for the encouragement of public awareness of the natural heritage they possess and the urban heritage that must be left behind.

Wherever support is needed for such enterprise it should be given and it is to be hoped that the RIBA will not be slow, when the opportunity arises, to recognise this positive move on the part of the RAIC.

H. A. N. Brockman (L)

(From The RIBA JOURNAL, August, 1960)

Cleary Auditorium and Convention Hall

Windsor, Ont

Architects
Johnson, McWhinnie, Windsor

Structural Engineer
L. H. Ingersoll, Riverside, Ont

Mechanical & Electrical Engineers
Nicholas Fodor & Associates, Toronto

Acoustic Consultant
Robert H. Tanner, Ottawa

Interior Furnishings
Robin Bush Associates, Toronto

General Contractor
Eastern Construction Co, Ltd, Windsor

In 1954, as part of its centennial observations, the city of Windsor held a local competition for a Civic Auditorium and Community Centre. The project was made possible by a bequest to the city of approximately $600,000.00 by a prominent Windsor resident, the late E. A. Cleary, QC. The competition was won by Douglas C. Johnson and Cunningham McWhinnie, both natives of Windsor, who graduated from the School of Architecture in Toronto in 1950 and 1951 respectively, and formed a partnership in 1953. Judges for the competition were Eero Saarinen and Peter Tillmann and the professional adviser was George D. Gibson. The winning design was published in the April 1954 issue of the *Journal.*

The building is located on a beautiful site overlooking Dieppe Gardens on the south bank of the Detroit River, close to Ouelette Avenue in downtown Windsor. The formal opening took place June 5 this year.

H. F. SILLS

View from Dieppe Gardens



The building is an integration of two basic sections in a rough "L" shape. The portion housing the exhibit areas, meeting rooms and dining lounge runs east and west and forms what is considered the convention wing. This is joined at its east extremity with the auditorium proper, which runs north and south. The building is framed with structural steel, supported on reinforced concrete spread footings with concrete foundation walls. Masonry walls are constructed of Norman brick with lightweight concrete block back-up. Curtain wall areas have stainless steel covered framing members with porcelain enamelled panels. Indiana limestone is used for facing the east and west walls of the second floor convention wing. Floors are reinforced concrete formed in a series of Tee sections by the use of removable metal pans. The balcony is cantilevered from one main truss, 11′ deep, spanning 98′. The distance from the centre line of the curved rear wall of the auditorium to the truss is about 30′. Balcony framing members extend through the main truss and are anchored back to the curved wall. Floors in public areas are generally travertine or terrazzo, with vinyl asbestos tile in the dressing room areas. Auditorium lobbies, aisles and the balcony lounge and meeting rooms are carpeted.

Marble, plastic laminate and wood panelling along with brick has been used for wall treatment of public areas. Dressing rooms, corridors and stair enclosures have vinyl wall covering applied over plaster in several patterns and colors. Most interior doors are sheathed in plastic laminated materials. The roof is built up using glass fibre roofing membrane between layers of asphalt.

The first floor of the convention wing accomodates a 3,730 sq ft exhibit area, a meeting room, auditorium foyer and ticket offices, etc. The basement floor extends below the convention wing and part of the auditorium proper, forming an "L" shaped 15,570 sq ft exhibit area, which, having its own entrances, offices, elevator and utilities, may be used independently of the remainder of the building. The second floor of the convention wing contains a 44′ x 200′ area which can be divided by a folding partition into lounge and dining sections.

The first floor of the auditorium proper contains chorus dressing, rehearsal and musicians' rooms, storage and workshop space, mechanical equipment, etc. The second floor contains the lobby and orchestra floors, dressing rooms, stage door, offices, etc. The fully equipped stage is 40′ deep by 80′ wide, with a proscenium opening 41′ x 20′, and an orchestra pit for 40 musicians. The auditorium seats 1,206.

The low pressure air conditioning system was designed for maximum flexibility to meet the different functions of the building. Separate air handling systems, functioning simultaneously or separately, serve the exhibit area, dining room, administrative offices, theatre and lobby, stage and dressing rooms. The basement exhibit area is provided with an air circulation system. Heating is hot water perimeter type.

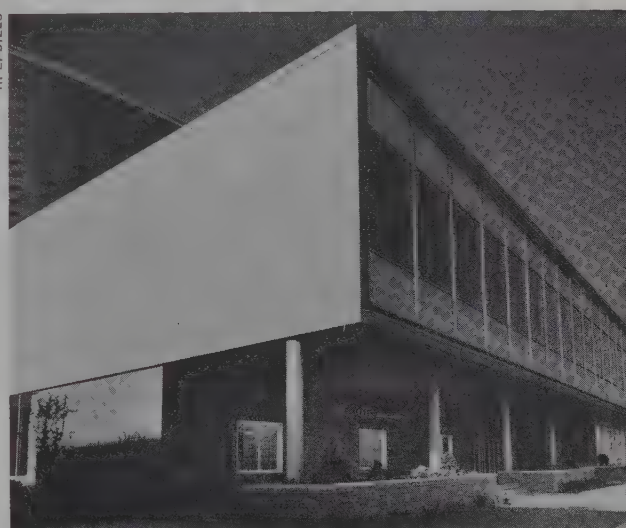
The entire auditorium lighting is controlled from a console mounted on a platform in the stage wings. A feature of the stage lighting control system is that lights for as many as five different scenes can be set in advance. Through small master controls, one scene may be faded into another without first going through blackout. The building is equipped throughout with a high fidelity public address system, telephone system, and audio intercom between the stage, spot gallery and projection booth. Provision is also made for radio and television broadcasting.

ERIC JAHN



Detail of curved wall

H. E. SILLS

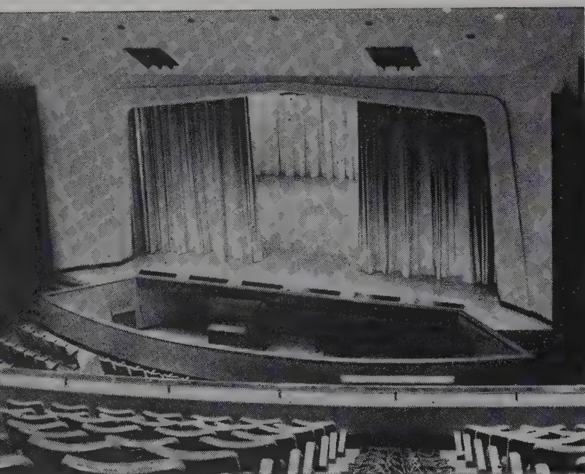


Main entrance

Stage door

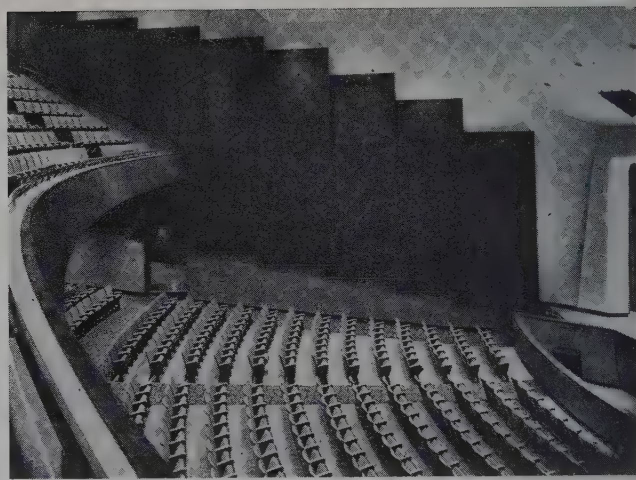
ERIC JAHN





H. E. SILLS

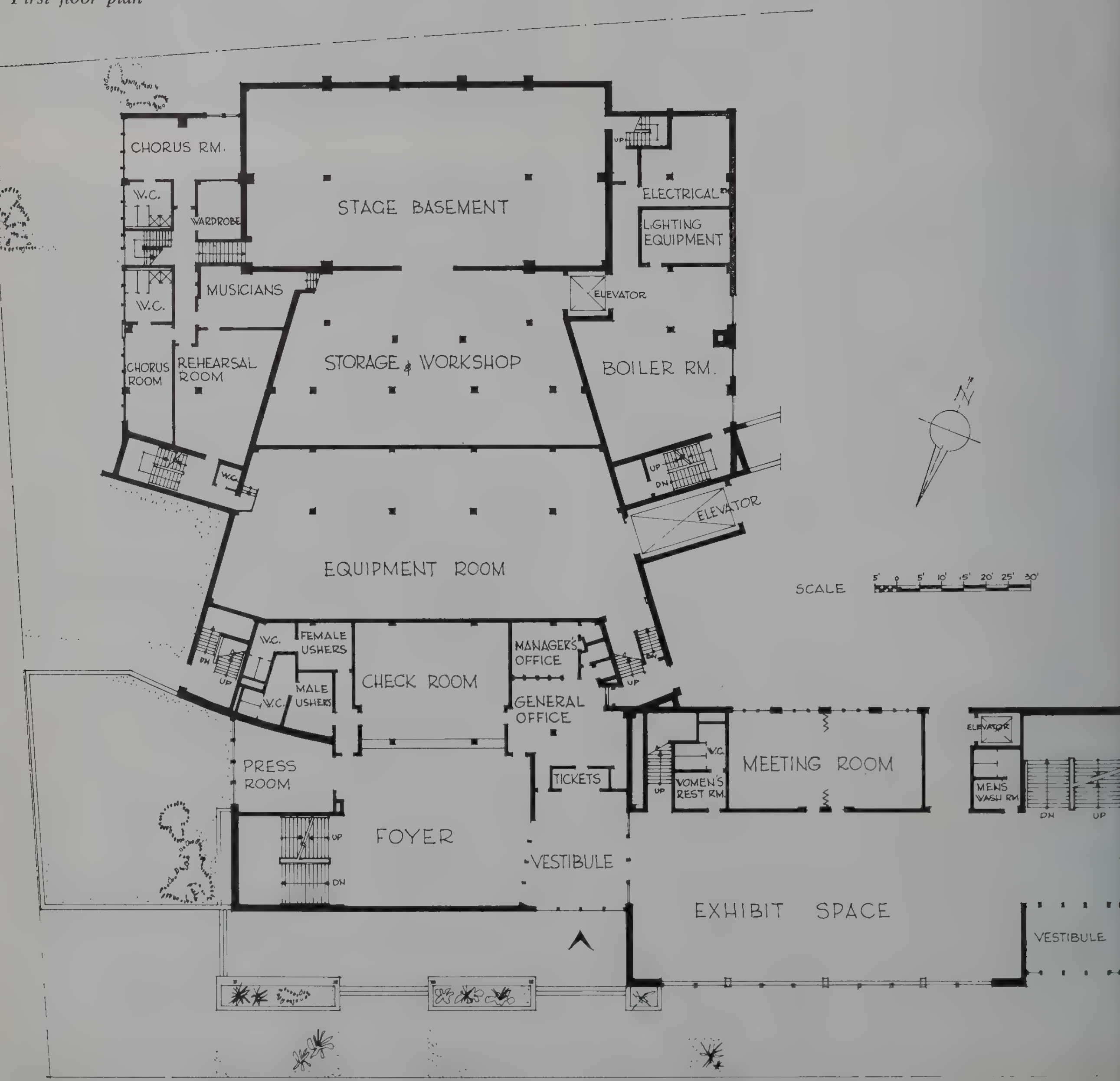
Stage and auditorium from balcony

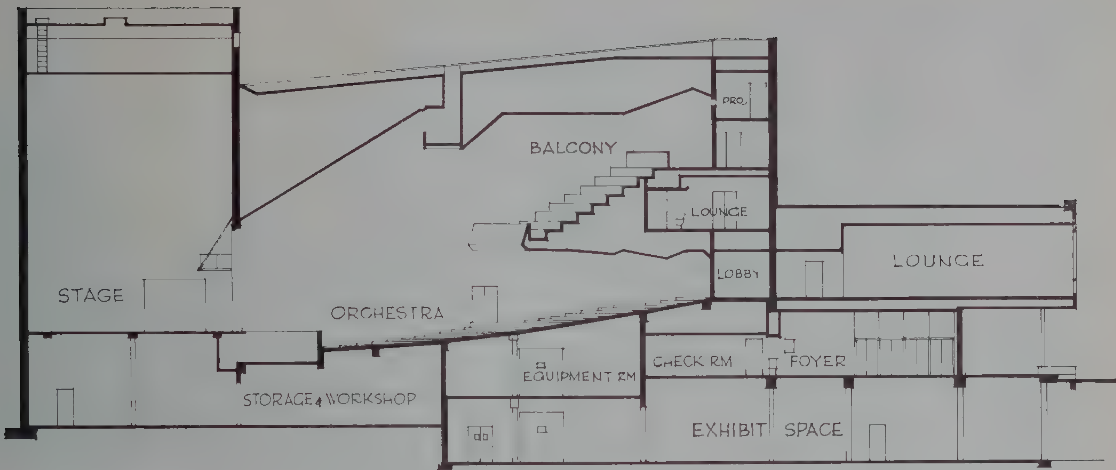


ERIC JAHN

Auditorium, showing acoustic wall panels

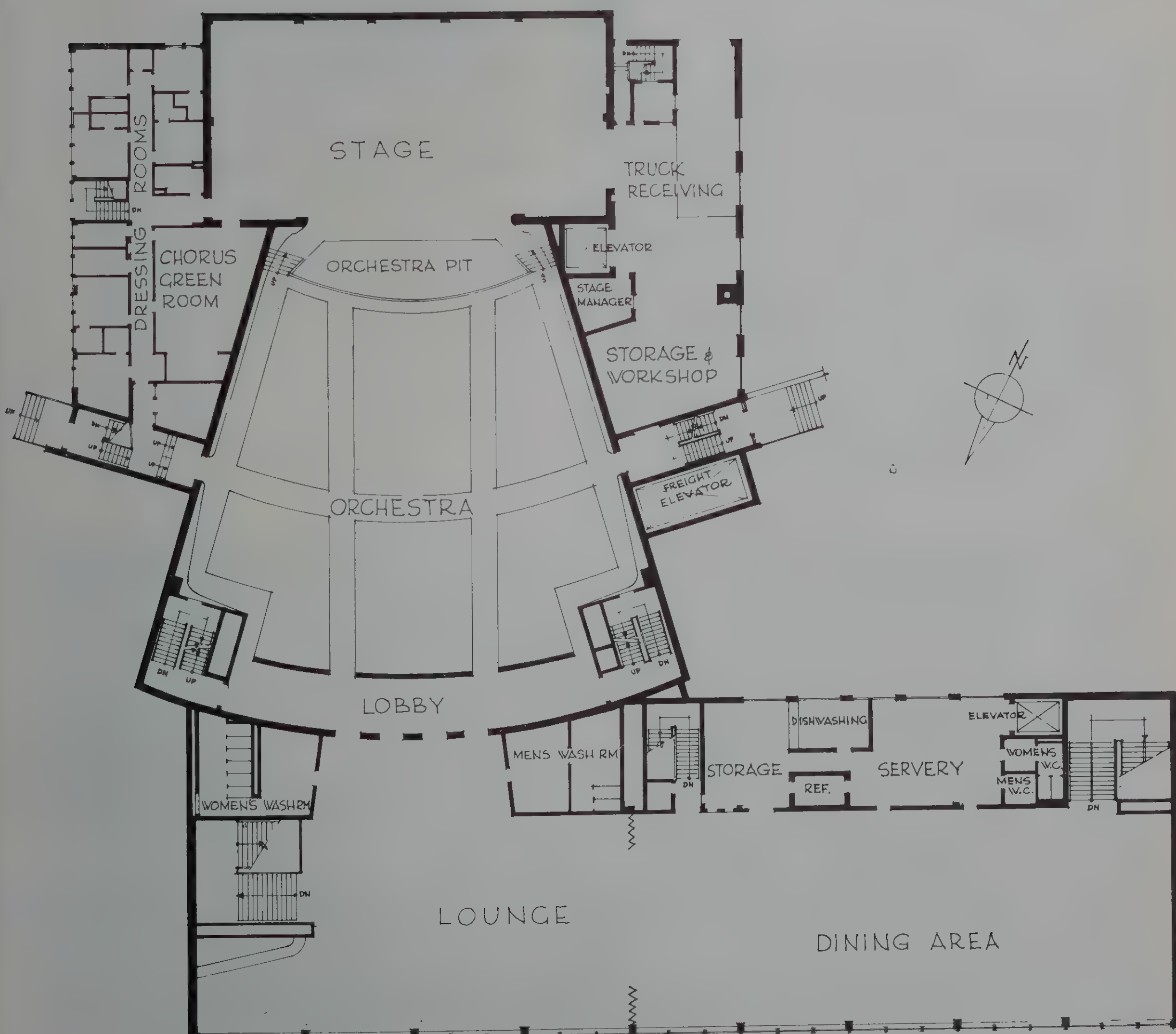
First floor plan



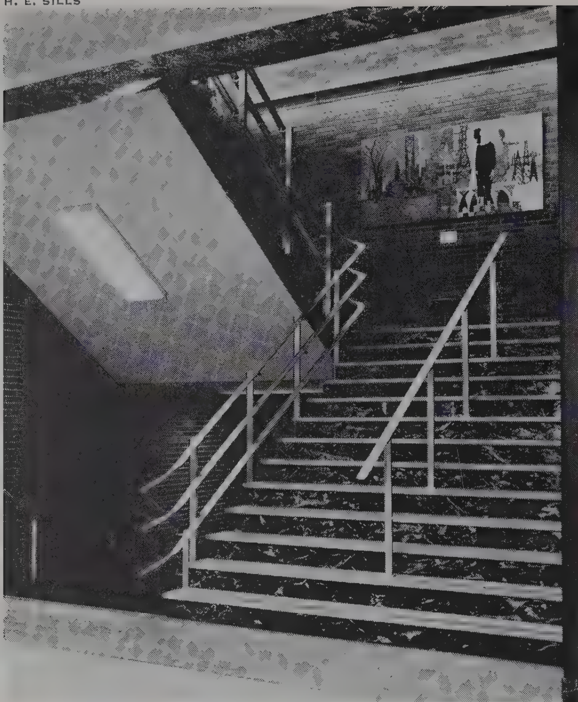


Section through orchestra

Second floor plan



H. E. SILLS



1



2

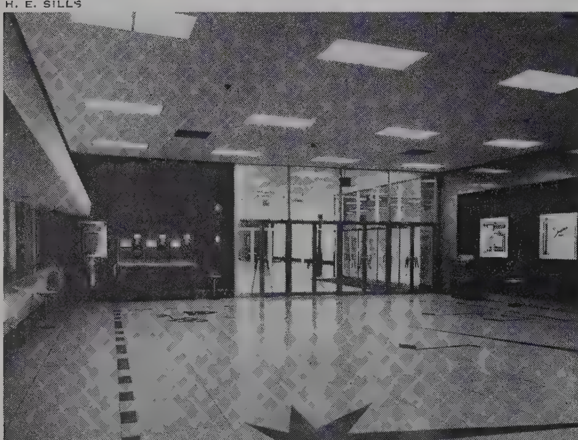
1. *Main stair to auditorium lounge from foyer. Mural by Kenneth Saltmarche, Curator, Windsor Art Gallery, presented by All Nations Group.*

2. *Main stair, view towards main foyer.*

3. *Main foyer.*

4. *Auditorium lounge, dining area of convention wing in background.*

H. E. SILLS

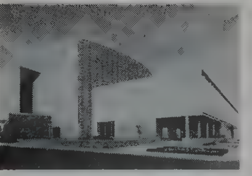


3

4

H. E. SILLS





Cleary Memorial Auditorium
and Convention Hall
Windsor

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OTTAWA 4, ONTARIO

OFFICE OF THE PRESIDENT

September 8, 1960.

To all Members of the RAIC:

Subject: Financial Support to Implement Report of the Committee of Inquiry into the Residential Environment

The Report of the RAIC Committee of Inquiry into the Design of the Residential Environment is probably the most important single accomplishment of the profession in Canada.

The Annual Assembly of the Royal Institute at Winnipeg in June, after receiving the Report and recognizing that it presented the whole profession with an unparalleled opportunity and a challenge, voted on immediate action to implement its recommendations.

It was agreed that the implementation program should be the responsibility of the RAIC-CMHC Committee on Housing, composed of James A. Murray (Chairman), James W. Strutt, John Bland (F), Humphrey Carver and Ian Maclennan. For effective work the Committee will need the services of a full-time Administrator, who would be attached to RAIC Headquarters in Ottawa for at least a year. The Administrator would guide the work of new committees established to develop the ten recommendations directly concerning the profession and work with government and non-government groups engaged in exploring the other 22 recommendations in the Report.

Existing RAIC resources are now fully devoted to a very active Headquarters' program and are incapable of sustaining the estimated $15,000 per year, which may be required for a two year period, needed to engage the Administrator.

The Royal Institute is therefore directing an appeal to its 2,200 members to contribute at least ten dollars each so that the Report of Messrs Peter Dobush (F), John C. Parkin (F) and C. E. Pratt (F) may be implemented. A similar appeal is being directed to architectural firms.

It is urgent that your contribution be received at Ottawa as soon as possible. It must be remembered that the profession, apart from attracting national attention through conducting the Inquiry and making the Report public, has never at any time had a better opportunity to provide a distinctive public service.

Yours sincerely,

Harland Steele

Harland Steele,
President

L'INSTITUT ROYAL D'ARCHITECTURE DU CANADA

BUREAU EXECUTIF
88 RUE METCALFE
OTTAWA 4, ONTARIO

BUREAU DU PRÉSIDENT

le 5 septembre 1960.

A tous les membres de l'Institut Royal:

Sujet: Appui financier pour donner suite au Rapport du Comité d'enquête sur les conditions de l'habitation

Le Rapport du Comité d'enquête de l'Institut Royal sur les conditions de l'habitation est probablement ce que les architectes ont accompli de plus important au Canada.

L'Assemblée annuelle de l'Institut, tenue à Winnipeg en juin, prenant connaissance du Rapport a reconnu qu'il constituait à la fois un défi et une occasion sans précédent pour tous les architectes, et elle a recommandé qu'on y donne suite sans délai.

Il a été convenu que cette tâche devrait être confiée au Comité mixte de l'IRAC et de la SCHL sur l'habitation, composé de MM. James A. Murray (président), James W. Strutt, John Bland, agrégé, Humphrey Carver et Ian Maclennan. Le Comité aura besoin des services d'un administrateur à plein temps qui sera adjoint au siège de l'Institut à Ottawa pendant au moins un an et qui devra guider dans leur travail les nouveaux comités créés pour mettre en oeuvre les dix recommandations visant directement l'architecture, et collaborer avec les organismes gouvernementaux et autres qui s'occuperont des 22 autres recommandations du Rapport.

L'Institut consacre toutes ses ressources financières actuelles à la réalisation de son propre programme; il est incapable de fournir chaque année les $15,000 dont on pourrait avoir besoin pendant deux ans pour rémunérer un administrateur.

L'Institut Royal s'adresse donc à ses 2,200 membres et les prie de verser chacun au moins dix dollars afin que l'on puisse donner suite au rapport de MM. Peter Dobush, agrégé, John C. Parkin, agr., et C. E. Pratt, agr. L'Institut envoie une demande semblable à tous les bureaux d'architectes.

Nous vous prions d'expédier votre contribution à Ottawa le plus tôt possible. Rappelons-nous que notre profession, en plus d'attirer l'attention de tous les Canadiens par son enquête et la publication du Rapport n'a jamais eu une meilleure occasion de servir avec distinction l'intérêt public.

Veuillez agréer l'expression de mes sentiments distingués.

Harland Steele

Le président,
Harland Steele

The Royal Architectural Institute Of Canada

Founded 1907 • Patron Her Majesty The Queen

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Curtain Walls and Dugouts

A writer to an evening paper in Toronto asked recently whether architects were giving thought to bomb blast and other modern martial phenomena in their continued use of the glass wall. We felt it was a pertinent question. Certainly, there is a noticeable contrast between the recommendations from the Prime Minister down to local mayors and reeves that we build ourselves basement hideouts of concrete block stocked with suitable canned goods for the duration of the attack and its aftermath, and our continued preoccupation with the curtain wall for places of business, recreation, education or worship. In the spring of 1941, we were sitting with a friend on a London roof chatting about the war, and praying that nothing more exciting than an incendiary bomb would interrupt our vigil. All around us was the hum and murmur of a great city pierced occasionally by scream of sirens. But more eerie still was the noise of wind in the completely windowless building on which we sat. We seem to recall that our friend had lost nine thousand panes of glass in one near miss. Nor were they Georgian panes in nice little muntin bars. His was one of those devilishly modern buildings for its day with what were called strip windows. The Jacobeans had used the same fenestration some years before, but we preferred to think of the strip as a distinctly modern achievement. Our friend's spandrels remained intact, but, if we return to the writer of the letter to the newspaper, he would ask what remains today with spandrels and windows of glass in a light steel frame, and what damage to human life might we expect?

We are afraid that the curtain wall which is so convenient a device for the office with a large output has, through books on the subject and institutes devoted to its promotion, made unpopular any other useful kind of wall. We used to speak with respect of the rhythm and pattern of the fenestration – the glow at sundown on the windows at Versailles which is one of the unforgettable memories of our youth – but, today, we are prone to dismiss at first sight a building with a "punctured" wall even though we may later see its real merits. "Punctured" is the unkind word conceived by some devotee of the curtain, and undoubtedly it has a sting.

From the multitude of materials available today in glass, stone, wood, brick, stainless steel, aluminum or porcelain enamel, we are not suggesting that one is better than another – they all have their uses, but as architects we must have noted that in the Toronto City Hall Competition the curtain wall and "punctured" wall designs were almost equally divided over five hundred competitors. It may also have been so in Winnipeg if one may judge by the designs of the finalists. Whatever the trend, we have become accustomed to abundant light and, that, we shall continue to demand.

Murs-écrans et abris

Quelqu'un se demandait récemment, dans une lettre à un quotidien de Toronto, si les architectes qui utilisent constamment le mur de verre oublient la guerre moderne et l'éclatement des bombes. Voilà une question fort pertinente. Nos dirigeants, du premier ministre aux maires de nos villes, nous recommandent de nous construire des abris de béton dans nos caves, avec des provisions suffisantes pour la durée d'une attaque et de ses effets, et nous utilisons avec une quasi obsession le mur-écran dans nos bâtiments d'affaires, de récréation, d'éducation ou de culte. Au printemps de 1941, nous causions de la guerre avec un ami, assis sur le toit d'une maison à Londres. La rumeur de la ville parvenait jusqu'à nous, déchirée parfois par le cri des sirènes. Ce qu'il y avait de plus lugubre, c'était le bruit du vent dans l'édifice totalement dépourvu de ses fenêtres sur lequel nous étions assis. Nous croyons nous rappeler que notre ami avait perdu neuf mille vitres, de l'éclatement d'une seule bombe tombée tout près de là. Il ne s'agissait pas non plus de petits carreaux du style des rois Georges dans de coquettes croisées. Son bâtiment était un édifice fort moderne pour son époque, avec des fenêtres en bandes. On croyait que les bandes de fenêtres étaient une réussite très moderne alors qu'on les avait déjà utilisées au XVIIe siècle. Les murs de tympan de notre ami avaient résisté, mais que resterait-il aujourd'hui de ces fenêtres et murs de verre dans un léger cadre d'acier, et à combien de morts et de blessés faudrait-il s'attendre?

La publicité faite au mur-écran par ceux qui sont intéressés à en répandre l'usage – et il faut en reconnaître les avantages dans les grands établissements – a rendu impopulaires tous les autres murs pourtant utiles. Nous avions l'habitude d'admirer le rythme et l'agencement du fenêtrage – nous nous rappelons le reflet du soleil couchant dans les fenêtres de Versailles, l'un des souvenirs inoubliables de notre jeunesse – mais aujourd'hui nous sommes enclins à ne tenir aucun compte d'un édifice aux murs "crevés" même si plus tard nous devions en reconnaître les avantages. C'est en des termes aussi irrespectueux que parlent les adeptes du mur-écran.

On dispose aujourd'hui d'une multitude de matériaux: verre, pierre, bois, brique, acier inoxydable, aluminium ou porcelaine émaillée, mais nous ne prétendons pas que l'un soit meilleur que les autres; chacun a son utilité. Mais nous avons remarqué qu'au concours de l'Hôtel de Ville de Toronto, les cinq cents concurrents se partageaient à peu près également entre adeptes du mur-écran et partisans du mur "crevé". Il se peut qu'il en ait été de même à Winnipeg si l'on en juge d'après les oeuvres des finalistes. Quelle que soit la tendance actuelle, nous nous sommes habitués à avoir beaucoup de lumière et nous continuerons d'en exiger beaucoup.

E.R.A.

FROM THE EXECUTIVE DIRECTOR'S DESK

THE RAIC IN A COORDINATING ROLE

CLOSE OBSERVERS OF THE BUSINESS SESSIONS at the Winnipeg Assembly in June have remarked on the apparent demand – not a new proposition by any means – that the RAIC coordinate more closely the operating rules and regulations of the nine Provincial Associations, and thereby add greater purpose to the collective activities of Canada's 2,200 registered architects.

Those who seek more involvement by the RAIC as the national association of Canadian architects, recognize, of course, that the Institute has no power to influence the legislative authority of Provincial Architects' Acts. But many dream about the strength the profession would gain from achieving a uniform fee structure, a country-wide public relations program, a national code of ethics, and more uniform registration procedures.

Most members of the profession are keenly aware that the RAIC Act of Incorporation vests the Institute with only enough authority to "establish and maintain a bond between the societies recognized by the Institute as component associations". However, to RAIC members it must be obvious that, unless the national body intervenes to review and assess existing methods and procedures to bring about unity and uniformity, the profession will advance on very narrow regional fronts, and forward progress will be uneven, to say the least. Certainly the major post-war advances within the profession have been recorded among the more liberally endowed associations. In its role as coordinator, a prime function of the RAIC is to disseminate information and know-how to the smaller component societies.

Some benefits are already discernible from deliberate efforts by the RAIC in 1959 and 1960 to mount a national public relations program, and the new fee structure wrested from the Federal Department of Public Works in May 1960 could only have been negotiated by the RAIC.

Yet the work of effective coordination is only beginning. A 1960 Assembly resolution stated that "a uniform schedule of fees and a uniform code of ethics should be adopted for the benefit of the architectural profession throughout Canada". This action led to the Institute appointing E. C. S. Cox (F) of Toronto, a Past President of the Ontario Association of Architects, to name a committee and conduct a study of the existing fee structure. At the same time the RAIC has asked all associations to cooperate in a survey to be made of existing codes of ethics. Finally, it is hoped that the members of the National Registration Council, formed in 1957 to study registration policy and make recommendations to the Provincial Associations, will make measurable progress this coming year.

L'INSTITUT S'OCCUPE DE COORDINATION

D'APRÈS LES SÉANCES DE TRAVAIL de l'Assemblée tenue à Winnipeg en juin, on semble souhaiter que l'Institut coordonne plus étroitement les règlements et règles de pratique des neuf Associations provinciales pour donner plus de cohésion à l'activité collective des 2,300 architectes inscrits au Canada.

Ceux qui veulent que l'Institut Royal, en tant qu'organe national des architectes canadiens, s'engage davantage, reconnaissent, naturellement, que l'Institut n'a aucun pouvoir pour agir sur l'autorité législative des lois provinciales relatives aux architectes. Mais beaucoup songent à la force que la profession acquerrait si elle disposait d'un tarif d'honoraires uniforme, d'un programme national de relations extérieures, d'un même code d'éthique professionnelle et de procédures d'enregistrement plus uniformes.

La plupart des architectes savent que la loi constitutive de l'IRAC n'accorde à l'Institut Royal que l'autorité suffisante pour "établir et maintenir un lien entre les sociétés reconnues par l'Institut Royal comme associations constituantes". Cependant, les architectes se rendent compte qu'il faut que l'organisme national étudie et revise les méthodes et procédures courantes si l'on veut réaliser l'unité et l'uniformité sans lesquelles la profession n'avancera que sur certains points très restreints. Depuis la guerre, ce sont les associations qui disposent des plus vastes ressources financières qui ont réalisé les plus grands progrès. L'une des principales fonctions de l'IRAC en tant que coordinateur d'activité doit être la dissémination de renseignements et de connaissances techniques aux sociétés constituantes.

Les efforts accomplis par l'IRAC en 1959 et 1960 pour mettre au point un programme national de relations extérieures commencent déjà à porter fruit; et seul l'Institut pouvait faire les négociations qui ont arraché un nouveau tarif d'honoraires au ministère fédéral des travaux publics en mai 1960.

Et pourtant, le vrai travail de coordination ne fait que commencer. Une résolution de l'Assemblée de 1960 portait que "un tarif d'honoraires uniforme et un même code d'éthique professionnelle devraient être adoptés à l'avantage de tous les architectes canadiens." Pour donner suite à ce voeu, l'Institut a chargé M. E. C. S. Cox (AIRAC), de Toronto, ancien président de l'Association des architectes de l'Ontario, de créer un comité et d'étudier la structure actuelle des honoraires. En même temps, l'IRAC a demandé à toutes les Associations de collaborer à une étude de tous les codes d'éthique présentement en vigueur. Enfin, on espère que le Conseil national d'enregistrement, fondé en 1957 pour étudier les problèmes de l'enregistrement et formuler des recommandations aux Associations provinciales, fera des progrès sensibles dans sa tâche au cours de la nouvelle année.

Robbie

Institute News

Massey Medals Competition Plans

Preliminary plans were made at the recent RAIC Assembly in Winnipeg by the Special RAIC Committee on Massey Medals, under the chairmanship of Professor John Russell of the University of Manitoba, to lay the ground work for the next Massey Medals of Architecture competition slated to take place in September and October of 1961. The last competition was in late 1958. The new National Gallery building has been booked for the start of an Ottawa exhibition to commence Thursday, November 2, 1961. Liaison is under way to establish an itinerary for the movement of the 1961 Massey Medals exhibition throughout Canada during 1962. It is hoped that arrangements may be made to display winning entries abroad.

News from BC

Chapter activities in Vancouver, Victoria and the Interior begin again in September. The Vancouver Chapter Executive has drafted a program for meetings through to June 1961, which will include prominent American architects as guest speakers. The Schools Committee, under the Chairmanship of Dave Lichtensteiger, is arranging a seminar and exhibition for the annual meeting of the BC School Trustees Association October 9. A panel discussion is being arranged, the topic of which will be "Better Schools: Or More of the Same". The Hospitals Committee, under the chairmanship of Fred Brody, is sponsoring a one-day conference in co-operation with the BC Department of Health, Hospitals Branch, to be held October 21. Discussions will emphasize problems in the design of small hospitals.

The AIBC Council appears to have anticipated one of the important recommendations of the RAIC Committee of Inquiry into the Design of the Residential Environment. A bulletin issued earlier in the year provides that BC architects may now offer their services in the design of homes costing less than $25,000 "at fees that are mutually agreeable between the architect and the builder, developer or individual client".

Prof Wolfgang Gerson is Acting Director of the School of Architecture at UBC during Prof Lasserre's one year leave of absence in Europe.

Liverpool Cathedral Competition

The Liverpool Cathedral Competition has been won by Frederick Gibberd, CBE, FRIBA, London. Details will be published later.

New President of RIBA



Professor Sir William Holford, MA (L'pool) FRIBA, PPTPI, FILA, a distinguished architect, planner and educator, has been elected President of the Royal Institute of British Architects. He succeeds Sir Basil Spence.

Born in Johannesburg and educated in Cape Town, Sir William studied architecture at Liverpool University and at the British School at Rome. He became a Rome Scholar in 1930 and was elected an associate of the RIBA in 1932. He became Lever Professor of Civic Design at the University of Liverpool in 1936. In 1948 he succeeded Sir Patrick Abercrombie as Professor of Town Planning at the University of London. Between 1939 and 1948 he held a number of public appointments, including Chief Technical Officer to the Ministry of Town and Country Planning, and consultant to the City of London and Liverpool University; the County of Cambridge and the City of Pretoria, SA. From 1951 to 1957 he was consultant to the government of Australia on regional development plans for Canberra. In collaberation with Sir Alexander Gibb and Partners he has worked on a number of roads and bridges in England and Australia. As an architect and consultant he has worked on the Corby New Town and for the University of Exeter. His buildings include the Nuclear Laboratory Group at Liverpool University, as well as offices, factories, apartments and houses in various parts of England.

Sir William is Chairman of the Advisory Committee on Buildings of Historic and Architectural Interest and a member of the Historic Buildings Council and the Royal Fine Art Commission. He has acted as assessor on several architectural competitions, including Toronto City Hall and the Pilot Plan for Brasilia, and is the author of numerous articles, studies and research publications.

CMHC ANNOUNCES $15,000 COMPETITION IN OTTAWA

Mr Stewart Bates, President of Central Mortgage and Housing Corporation, has just announced the first competition to be sponsored by the Corporation. It involves the planning of 71 acres of property in Ottawa known as the Smyth Road site, as well as the designing of the dwelling units, shops, and other facilities which will be part of it. Mr Bates stated that one of the principal purposes of the competition was to demonstrate the merits of an exemplary residential development with a mixture of complementary housing types where all the professional skills of the architect, town planner and landscape architect could be employed.

The Jury consists of E. R. Arthur, A. P. C. Adamson, Frank Ayers, Director of Planning and Works, City of Ottawa; John Bland, E. R. Collins, Chief Appraiser for CMHC; Louis Kahn, of Philadelphia, James Louden, President of the Canadian Association of Real Estate Boards, and Ian Maclennan.

Prizes are — First $15,000, Second $3,000, Third $2,000.

The conditions of the competition will be available in late September and registration will close November 15th. The last date for entries will be February 28th, 1961. All correspondence will be addressed to the Professional Adviser, Dr E. R. Arthur, School of Architecture, University of Toronto.

Seattle Fountain Competition

An international competition for the design of a fountain for its new 74-acre civic centre is being conducted by the City of Seattle. Registrations, giving principal's name, address and profession must be received by the professional adviser, J. Lister Holmes FAIA, Seattle Civic Centre Fountain Competition, 215 8th Ave N, Seattle 9, Wash., U.S.A., by October 14, 1960.

The first stage will be judged December 12, 1960, and the first five winners will receive $2,000 each. The second stage will be judged March 16, 1961, and the winner will receive $5,000 plus payments up to an additional $5,000.

CGRA to Study Traffic Problems

A three part symposium "Can the City Survive the Stranglehold of Traffic?" will be a feature of the Canadian Good Roads Association convention which opens in Toronto October 17th.

The Fellows' Scholar — 1960



Mr Jean Gareau, MRAIC, Montreal, who has been awarded the RAIC College of Fellows scholarship for 1960. The Scholarship, with a value of $2,500, will be used by Mr Gareau for a six months' study of public housing in Western Europe.

Mr Gareau obtained his BA Degree from the University of Montreal in 1952, and a Diploma in Architecture with honors from Ecole des Beaux-Arts in Montreal in 1957. He won first prize in the Architectural Competition of the Province of Quebec, Ecole des Beaux-Arts in 1956; first prize for architectural thesis in 1957; and the RAIC Bronze Medal in 1957.

For the past three years he has worked in Montreal on architectural and town planning projects, and has published articles and lectured on architecture, fine arts and town planning. He is a member of the Montreal Chamber of Commerce, the Alumni Association of Jean-Brébeuf College, the Alumni Association of the University of Montreal, the Junior Committee of the Montreal Symphony Orchestra, and of the Junior Associates of the Montreal Museum of Fine Arts.

Announcements

Dobush and Stewart, Architects, are pleased to announce that Mr R. David Bourke, M.Arch., MRAIC, has become a partner in the firm. The new firm shall be known as Dobush Stewart Bourke, Architects and Consultants, 4635 Sherbrooke St. W., Montreal.

The full names of the original partners in the firm are Mr Peter Dobush, B.A., B.Arch., FRAIC, and Mr William Stewart, B.Arch., MRAIC.

Charles B. Greenberg wishes to announce that Z. Matthew Stankiewicz has recently become a full partner in the architectural firm of Charles B. Greenberg Associates. The firm will carry on the practice of architecture from 380 Elgin Street, Ottawa, under the style of Greenberg & Stankiewicz, Architects.

Farm Dwelling Architecture

A request for the names of architects who have shown particular interest in Canadian farm dwellings has been received from Joy Guild, Women's Editor of *Family Herald,* 245 St. James Street West, Montreal. The inquiry is a result of the publication of the report of the RAIC Committee of Inquiry into the Residential Environment.

US Secondary School Design Study

A research study in secondary school design entitled "Environment for Learning" has been prepared by Goleman & Rolfe, Architects and Engineers of Houston, Texas. The Carrier Corporation, which sponsored the study, asked the architects to develop a type of school which would offer the most facilities and the most flexible facilities for the least owning and operating cost. Copies of the study may be obtained from Carrier Engineering Ltd, 70 Queen Elizabeth Blvd, Toronto 18.

Seminar on Training in Chile

The International Union of Architects has organized the first International Seminar on the Training of the Architect, to take place at the School of Architecture, University of Chile, Santiago, from September 28 to October 6, 1960.

Employment Wanted

Employment wanted in Canada leading to partnership in progressive firm. B.Arch, Sydney, Australia, 1947; worked three years in USA and last nine years with Le Corbusier and Jeanneret on Chandigarh Project; fluent in English and French. Mrs U. E. Chowdhury, ARIBA, Architect, Capital Project, Chandigarh, India.

Position in Canada wanted by 1959 graduate of School of Architecture, Technical University of Istanbul, French and English speaking. Available August 1961. Ceyhan Güran, M.S.B., K.K.K. is. Da 6. Sb. Ankara, Turkey.

NEXT ISSUE
Union Carbide Building, Toronto
Industrial Buildings, Montreal

Letter to the Editor

Editor, RAIC *Journal:*

The RAIC Report on the Design of the Residential Environment ignores a fundamental issue: "Is private enterprise best suited to supply housing for Canadians?"

The Report apparently assumes private enterprise is as qualified to supply dwellings as it is to supply bath tubs. So does the National House Builders' Association which increasingly exhorts its members to use the successful merchandising techniques of the cosmetics industry.

The RAIC Report ought clearly to have stated that housing is not just another consumer industry. Instead it suggests that the present housing manufacturers be encouraged to build even more of their inferior products in the naive hope that a meeting of demand will raise standards. Anyway, of what demand are we speaking? The open, or economic demand which manifests itself on the market? Or also the hidden, social demand?

There is a quicker and less costly way to better housing. This is the encouragement of companies which are not looking for an immediate or short-term return of capital at an attractive profit. These companies would be large-scale, non-profit or limited-dividend organizations, possibly co-operatives, concerned with housing as a social expression of a civilized society. They would deal with the planning and financing of housing. Actual construction could be carried out by private contractors.

These social housing companies should be given preferential treatment by the government. Is it not becoming an accepted government responsibility to ensure that the population is well housed — not for humanitarian reasons alone, but also for hard reasons of economy affected through improved physical and, perhaps, even mental health, communal stability, and better functioning cities?

These new companies freed from narrow considerations of profit would act as the lever by which the general standard of housing is raised. Private companies would have this socially desirable standard to live up to. They would be forced to improve — or be replaced.

Housing is too important to be left to our present speculative builders and finance institutions.

Stig Harvor, Ottawa

CANADIAN
BUILDING DIGEST

DIVISION OF BUILDING RESEARCH • NATIONAL RESEARCH COUNCIL CANADA

Vapour Barriers in Home Construction

by G. O. HANDEGORD

UDC 699.82

The term "vapour barrier" is one which has come to be accepted in building technology as describing a special class of materials which offer a high resistance to the flow of water vapour. In general, vapour barriers are special building papers, membranes, or coatings designed for this specific purpose. There are other building materials, however, which are used as cladding, insulation, or as protective coatings, and which may act as vapour barriers. In some cases their vapour barrier properties may be used to advantage, while in other situations they may create problems.

Only a few building materials, such as glass and metal, can be regarded as impervious to the flow of water vapour, but a considerable number of materials will provide sufficient resistance to be used for vapour control purposes. To classify these as vapour barriers, an arbitrary standard has been established by which materials can be rated in terms of their water vapour permeability or water vapour permeance. These coefficients indicate the rate at which water vapour will diffuse through the material under a given set of conditions. Permeance coefficients are expressed in units called "perms", one perm representing a transfer rate of one grain per square foot per hour under a vapour pressure difference of one inch of mercury. The lower the perm rating, the greater is the resistance of the material to vapour movement. The resistance to vapour flow required depends on the service conditions. For house construction, materials having a permeance of 0.75 or less when tested under prescribed conditions are generally classified as vapour barriers. For some applications, however, permeance values of 0.25 or less may be necessary.

There is a wide variety of materials that are used as vapour barriers. Some of the general classes and types of building products that fall into this category are as follows:

Asphalt coated felts and papers
Asphalt laminated papers
Heavy roofing papers
Metal foils of copper or aluminum
Polyethylene film
Aluminum paint
Asphalt paints and coatings
Varnish vehicle paints
Latex emulsion paints of some types
Exterior grade plywood
Cellular glass insulation
Cellular plastic insulation.

While the materials listed above exhibit a high resistance to the passage of water vapour, this property is not the only factor that should be considered in the selection of a vapour barrier for a specific purpose. The properties of the material in regard to tensile strength, pliability, tear resistance, durability under bacterial action, freezing and thawing or wetting and drying, may also be of importance. In the final analysis, however, the effectiveness of the barrier is determined by the design and care involved in its application. The most impermeable, most durable vapour barrier may be rendered virtually ineffective by the presence of accidental or intentional openings. The extent to which such openings will occur, the methods used to counteract their effect, as well as the conditions under which the barrier must function are largely determined by the details of the specific application. An appreciation of the factors involved in each case is therefore necessary for satisfactory performance to be realized. Not every application can be considered in this note, but some of the more common situations encountered will illustrate a few of the problems and general principles.

Vapour Barriers in Exterior Walls

The most common use of vapour barriers is in providing vapour protection for insulated frame walls in winter. Without such protection, the possibility of excessive condensation occurring within the wall is likely, giving rise to subsequent paint blistering and

peeling, or even rotting of the exterior sheathing and structural members. Paint failures cannot always be prevented by proper vapour barrier installation alone, since they may result from moisture entering the wall from outside. The vapour barrier only reduces the amount of moisture entering the wall from *within* the building.

The moisture content of air within most houses in winter will be higher than that of outside air. This condition results in a vapour pressure difference between inside and outside, with water vapour tending to diffuse through the building enclosure to the outdoors. If this vapour is allowed to penetrate the interior cladding and insulation it will come in contact with surfaces within the wall that are at a much lower temperature and will condense on these surfaces as water or frost. During subsequent milder weather or through the warming effect of the sun, this moisture will be absorbed by the wall materials and may give rise to deterioration, or may drain through unintentional openings in the cladding materials to produce unsightly staining or create a nuisance.

Condensation within exterior walls can be reduced to an acceptable level by increasing the resistance of interior cladding assemblies to water vapour transfer. The simplest and most common approach in new construction is to install a sheet-type vapour barrier over the insulation immediately beneath the interior cladding. Many batt- or blanket-type insulations are sold with an integral vapour barrier as the paper backing. Such a membrane will provide satisfactory protection provided every effort is made to lap the paper over all framing members. Often it is difficult to cover the wall completely using this barrier alone, if the batt is to be indented between furring or if it is supplied in lengths shorter than the full height of the wall. Under such circumstances, and in regions of severe winter climate, a separate barrier is recommended. In the selection of separate barriers, those which possess resistance to tearing and can be applied with a minimum of joints are to be preferred.

Paint films may be used to provide reasonably effective protection, but difficulties are experienced with such coatings in obtaining adequate sealing at windows and baseboards or other trim. Cracks which may subsequently develop in the film will also reduce its effectiveness. Similar problems arise with the use of vapour-resistant interior cladding materials because of the difficulty of providing continuity at joints and window openings. Separate vapour barriers should be used with such materials except under special circumstances.

The importance of avoiding all unnecessary openings through the vapour barrier cannot be overemphasized. These openings may not only provide a means for water vapour to pass into the wall by diffusion, but if associated with a crack or opening in the interior cladding they may also allow moist air to flow into the wall under the action of air pressure differences. Tests have shown that a vapour barrier which barely meets the permeance requirements, but has no openings, will perform satisfactorily under severe conditions. Openings in the most impermeable barrier, however, will result in excessive condensation within the wall. Slight differences in permeance ratings are therefore of secondary importance in the selection of a suitable material.

It is almost impossible to avoid some openings or breaks in vapour barriers in building construction, particularly where electrical outlet boxes or warm air supply registers occur on outside walls. Every effort should be made to fit the separate vapour barrier tightly around these openings. In walls with batt or blanket insulation the integral barrier should be forced behind the outlet and securely fastened to the adjacent framing. This will provide a secondary line of resistance to the movement of moist air into the cold regions of the wall.

Because a completely impermeable interior cladding is seldom, if ever, achieved it is important to recognize that some condensation may occur within exterior walls in winter. Every effort should therefore be made to permit this moisture to escape, either by using materials for exterior sheathing and cladding that are permeable to water vapour, or by providing some other means for moisture removal. Under normal conditions, and where reasonable care has been exercised

in the application of vapour barriers, the small amount of moisture that may accumulate will escape during the annual weather cycle without causing serious difficulty. When using sheathing or cladding materials that possess vapour barrier properties, special steps must be taken to control condensation. If these materials are relatively resistant to water vapour flow but not impermeable, such as exterior grade plywood, use of separate vapour barriers of lower permeance on the inside, carefully applied, may give adequate protection. Where impermeable materials, such as metal or glass, are used as cladding, provision must be made for venting the interior of the wall to outside to permit the escape of water vapour. Vents are most effective when located at different levels and connected by air spaces within the construction since air interchange with outside is promoted by chimney action. Precautions must be taken, however, to ensure that excessive ventilation and air movement within the construction do not occur as a result of wind pressures.

Vapour Barriers in Ceilings and Roofs

The same basic principles of vapour control in frame walls apply to insulated ceilings and roofs. There is a greater possibility for more openings to exist in vapour barriers in ceilings of frame construction than in walls. Not only are electrical ceiling fixtures common, but openings occur around plumbing vents, ductwork, and chimneys. Of even greater significance is the tendency for moist interior air to flow upward through these openings due to the chimney action of the building itself. The danger of excessive amounts of moisture accumulating in the attic space is therefore more acute than in exterior walls.

Pitched roofs offer means for the removal of this moisture by natural ventilation. The small amount of heat transferred to the attic through the insulation and the heat gain through the roof from the sun warm the air in the attic space and increase its moisture-carrying capacity. At the same time, this slight elevation in attic air temperature creates a chimney effect which induces ventilation, provided adequately sized and properly located vent openings are incorporated. As a general rule, these vents should be of such size as to provide a total screened area of one square inch for each square foot of ceiling area, and should be so located that the total vent area is distributed equally between eaves and ridge.

Flat or low pitched frame roofs present a somewhat more difficult problem for they do not provide sufficient height to create adequate chimney action. In addition, the smaller passageways above the insulation offer a greater resistance to air flow and inhibit natural ventilation due to wind. The problem of vapour control with this type of flat roof becomes more difficult as the span of the roof increases. In most cases roof joists will be blocked at bearing partitions and some means must be provided for the through-flow of air. Furthermore the potential for flow of moist air from the building into the roof space increases as the height of the building increases and it becomes more and more difficult to provide a sufficiently tight vapour barrier.

An alternative approach to the problem of flat roof design in frame construction is the use of rigid insulation applied over a vapour barrier on the roof deck. There is less likelihood of breaks and openings occurring in the barrier under such conditions and little opportunity for flow of moist air from the building. Its location, however, from the thermal standpoint may not be the best. Care should be taken to provide sufficient insulation above the barrier to ensure that at no time will the temperature of the decking fall below the dew point temperature of the air within the building. With exposed beam ceilings this danger is not acute unless the decking contributes a substantial portion of the over-all thermal resistance or unless the humidity within the building is excessively high. With finished ceilings, the thermal resistance of the interior cladding and air space must be kept to a minimum.

In flat roof designs with rigid insulation on the deck, the fact that the roofing and vapour barrier restrict both the entry and escape of water vapour should be recognized. Moisture may accumulate in the insulation by means other than condensation: from rain during construction, for example, or through

subsequent roof leaks. Following application of the roofing, or repair of leaks, heating of the roof by the sun may result in very large pressures being developed by the moisture within the insulation. This effect is regarded by some authorities as contributing to blistering and early roof failure. To prevent this from occurring, a suitable venting arrangement is sometimes used to relieve the pressure developed within the insulation. Still another approach to the problem is to use insulations which have low water and water-vapour absorption properties.

Vapour Barriers for Special Applications

Certain applications for vapour barriers require special properties of the material. One notable example is the use of membranes to prevent moisture transfer from the ground into concrete slab floors or into crawl spaces. In both of these instances, resistance to damage by tearing or puncturing, and resistance to bacteria and fungi attack, are prime requisites. Roll roofing, of 45-lb weight or heavier, or polyethylene film of 4 ml or greater thickness, perform satisfactorily in these respects. When used under concrete slabs placed on gravel or crushed rock fill, a layer of ordinary building paper should be placed between the polyethylene and gravel. Unless this is done, excessive puncturing of the film may occur.

Summary

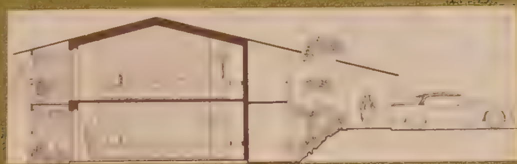
In building terminology, a vapour barrier refers to any material used to restrict the movement of water vapour. It may take the form of a coating, membrane, or board, but is normally a sheet material designed to fulfil this one particular function.

The correct selection of a vapour barrier is influenced largely by the peculiarities of the application for which it is intended, and involves consideration of other properties of the material in addition to its water vapour permeance. These properties vary widely with different vapour barriers, and no one material is necessarily suited to all applications. The conditions to which the vapour barrier is exposed after installation are a factor, but the circumstances during application are usually of most importance. The most important general principle to be followed in both design and installation is to reduce to a minimum the number of openings in the barrier. Where such openings are necessary, special care should be taken to seal the barrier so as to approach complete continuity.

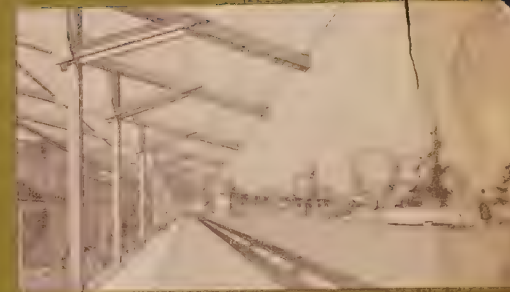
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A Motel Project

by Raymond Moriyama & Associates







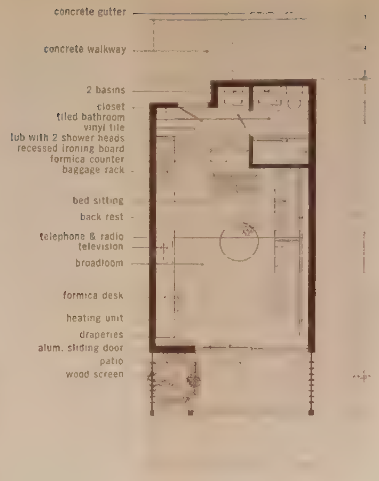


1 • Entrance
2 • Office
3 • Reception
4 • Telephone exchange, teletype
5 • Manager (living quarters over office)
6 • Lounge
7 • Washrooms
8 • Ornamental Pond
9 • Motel sign on highway
10 • Restaurant
11 • Blocks with maid's room & unit types A B C D E F
12 • Blocks with units type A B C D E
13 • Maid's room
14 • Refreshment dispensers
15 • Service yard
16 • Heating plant, maintenance shop
17 • Cooling tower for central air conditioning system
18 • Putting green
19 • Pavilion (over pool mechanical equipment)
20 • Children's play area
21 • Swimming pool
22 • Children's wading pool

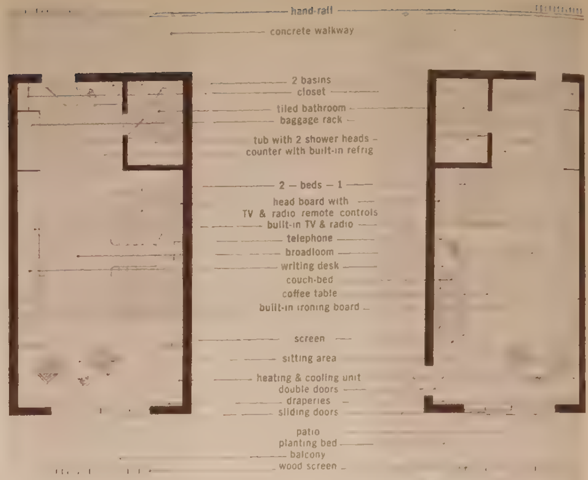


RENTAL UNIT TYPE "A"

RENTAL UNIT TYPE "B"



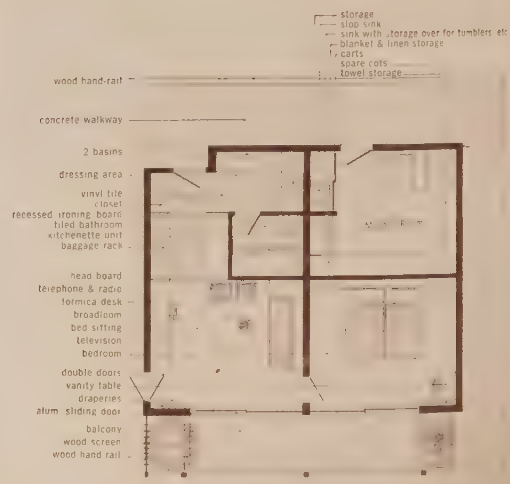
RENTAL UNIT TYPE "C"



RENTAL UNIT TYPE "D"

RENTAL UNIT TYPE "E"





RENTAL UNIT TYPE "F"

Trends in Motel Design

Design and business

Services and operation

Management

Number of units?

Landscaping

Location

Guests — likes and dislikes

Costs

by
RAYMOND MORIYAMA

As we evolved from the town and rural era of the Twenties and the Thirties to the present period of cities, suburbs and super-highways, the motels in Canada also went through an evolution—from the infancy of the unheated cabin, the bare bulb and lumpy mattress in the Twenties and the early Thirties, through the rapid and erratic growth which characterized the adolescence in the Forties and the early Fifties, to the adult period of refinement and highly competitive business of the present. In Canada the point has been reached where the owner, the prospective owner, as well as the architect must reassess the questions of motel business and motel design to meet the challenge of tomorrow.

Too many of our new motels already are physically obsolete — too many are operated in a "grandma-grandpa" fashion, quaint and folksy, but inefficient and inappropriate. Too many are designed with shallowness and gaudiness, lacking the quality and character, to attract the prospective guest. It is no longer a matter of providing comfortable beds in heated rooms. It is not enough to supply hot and cold running water. Today, the public, driving a faster automobile, from a better home and with a fatter wallet, is demanding much more in motel accommodation than a decade ago.

Today's motel is a big competitive, "scientific" business. No motorist thinks twice about driving 20, 30 or even 50 miles to seek a motel of his taste. Moreover, the competition is no longer limited to other local establishments. The competition from outside this country, especially from the southern United States, is ever increasing, wooing auto tourists and vacationers away from Canada with better and more suitable facilities. During a trip through eighteen States, what impressed this writer was the *quantity* of the amenities provided by the motels, which, though in many cases architectural "shockers", always gave more facilities for the dollar than ours. As one couple visiting New Orleans from New York State said, "We used to go to Ontario every summer — and we miss the terrific fishing there — but we were never able to find a suitable motel and restaurant. So, now, every year we come down this way where more suitable accommodation is available". This attitude is commonplace in the United States. Unless our motels provide amenities and improve the design to satisfy the more demanding public, Canada can expect to lose a larger portion of its tourist trade. The quality of our motels, without any exaggeration, can affect our whole tourist industry.

In this light, the prospective owner must be more critical and analytical of the motel trend; the owner of less successful motel must become aware of the services and facilities demanded and add amenities desired. The architect must realize his responsibility in the motel field, and must design not only to please the owner, but keep himself up to date on trends, know the financing, understand the operation, and be able to guide the owner in making the correct investment in the right places.

Mr Moriyama, who graduated from the School of Architecture at Toronto in 1954 and obtained his M.Arch at McGill in 1957 on a CMHC Fellowship, practises in Toronto under the name of Raymond Moriyama and Associates. He has given extensive study to motel design and over the past two years has travelled 30,000 miles inspecting current developments in the eastern and southern United States, Mexico and Canada.

A motel is a sound financial investment, if handled properly. The return on the dollar is far greater than from a hotel. On the average the hotel operates to make 10% profit: the motel makes 30%. The writer knows of an owner in Canada who netted over 50% in his second year of operation. This explains why the larger hotel chains in the United States are rapidly entering the motel field.

Furthermore, the initial investment is relatively small. The cost of land, building and operation is far less than that of a hotel and the break even point is low. In the case of an independent operation, it can be as low as 30% occupancy.

The number of people registering at motels is increasing in Canada. Twenty years ago, 67% of auto tourists stayed in hotels. In 1952 only 16% of the estimated 60,000,000 occupied the hotels, while 66% — 40,000,000 were enticed by the motels.

A quotation from the results of a survey made by the American Hotel Association will illustrate yet another reason for the motels' success. "Too many Americans . . . . and especially women . . . . hesitate about going to hotels because it is a strange and different world . . . . they are afraid of not knowing the right thing to do, the way to act, how to tip, what to say, and what not to say to the various employees. People instinctively avoid any experience which gives them a feeling of inadequacy. In brief, most of the 66 per cent of men and 72 per cent of women who never ventured through hotel doors this year (1947) are awed by hotels and their customs. They have the same feeling when they find themselves in a hotel lobby as would the average American suddenly thrust into a palace at some court function of a king. And to the person who has seldom been in a hotel, the experience with doorman, room clerk, and bellboy may make him as ill at ease as the first time he has to look across a polished desk to see about a loan." This psychological factor applies equally to Canadian travellers.

All these facts paint a rosy picture for the motel business in Canada, and it certainly can have a bright future. However, these same facts also attract the short-sighted "get rich quick" entrepreneur and the individual, sincere, but lacking both the capital and the knowledge of motel operation. For such the motel may be a poor investment. The tendency to create built-in obsolescence is too great. They forget, or don't know, that motels are hard work. When confronted by these enthusiasts, the architect must have the foresight and the courage to assess the intentions of the prospective operation, explain the disadvantages, and, in some cases, discourage the venture. The fact is that the average occupancy rate in Ontario over a twelve month period is 35%, only 5% above the lowest possible break-even point. A bad investment on the part of a client does little for the professional reputation and prestige of the architect.

This occupancy rate in a motel (that is, the percentage of the total number of rental units occupied every night over a period of a month or a year), not the size of the establishment, is the measure of the success or the failure of the business. A 40-unit motel with a 90% occupancy rate is considered a better investment than a 200-unit motel with a 55% occupancy rate. Of course, if the occupancy rate of the latter motel is raised to 80% or more, it immediately becomes a superior investment. Most motel owners have said that if the occupancy rate passes 70% the motel makes money, if it climbs over 80% and into the 90's there is no better investment. Therefore, during research trips, the writer took special note of those motels which had occupancy rates higher than 80%; and cast an even more critical eye on those with figures over 90%. He also visited many opened within the last year, especially those built by the large concerns. To obtain a contrasting picture, he registered at those which were obvious failures. He spoke to owners, managers, guests, architects and engineers, and tabulated their thoughts and comments, together with his personal observations and experiences, into two lists, one of "demand" (what the public is demanding) and the other of "supply", (what motels are providing)—the combination of the two forming the "trends". The following, therefore, is a summary of the "trends".

THE PROBLEM — DESIGN AND BUSINESS

As one manager of the Hilton chain explained, "The problem in a motel business is to attract the customers, to keep the customers, and to get the customers to recommend your place to others". When statistics indicate that 40% of all tourists return to the place they visited the year before and that 25% of tourists go to places recommended by friends, the concern of this manager becomes obvious. Moreover, the business men and salesmen, who travel more frequently than tourists, stay at certain motels by habit if their first stay had been a pleasant one.

On the question of how one solves this problem, a manager with a record of 98.2% occupancy rate over the last two years for the Howard Johnson chain summed up the answers given by almost all the successful motel owners and managers.

"There are two things that sell a motel: One is service, or the lack of it; the other is design."

The overall design attracts and draws the prospective guest to the office; the friendly, unassuming service at the desk puts him at ease; as he is guided to the unit, the well designed amenities, such as the swimming pool and landscaping, create a "shangri-la", a restful haven from the highway; the carefully planned and tastefully detailed unit adds to his physical and visual comfort; the additional services such as the delivery of meals, ice water,

and local newspaper, the morning wake-up, and the free coffee, increase the sense of luxuriousness and convenience–the sum total equals good-will. Good-will means a return customer and recommendations.

Other comments by successful managers were: "The first impression is the most important, whether it's the first impression from a highway travelling at 60 miles an hour or the one when the door of the rental unit is first opened."

"The design to catch the customers; service to hold them."

"There seems to be a strong relationship between good design and good business."

The type of design preferred by many seems to lean heavily to the domestic with a tinge of "fantasy"–happy, quiet and contemporary. "Spectacular" was a word heard only in and around Miami Beach.

SERVICES AND OPERATION

On the question of services and operation, there were as many different answers and approaches as those interviewed. However, there seems to be an agreement in principle that the services in motels should be geared to create an atmosphere of informality and quietness–essentially a type of self-service with "stand-by" services, such as valet, delivery of meals and baby sitting available if requested; and that the operation should be organized to give the best possible service with the least number of staff. For these reasons, a telephone in each unit is now mandatory, and the push button automation for a centralized control of maid service and heating is gaining popularity.

MANAGEMENT

Since any design is affected by management, the prevailing trend in this will be of interest.

The key man in a motel operation is the manager, if not the owner. A judicious choice of manager is imperative. Although experience is essential, a man trained for motel management is a rarity in Canada. As a motel manager with nearly 30 years experience in hotel management stated, "A hotel and a motel are two different animals. I had to make quite an adjustment in my approach when I first took over this motel."

A training program for new managers is attempted in the United States. In a Howard Johnson chain, the managers (usually husband and wife teams for reasons of stability) are selected while the buildings are still on the architects' drafting board. They are sent on field trips to other Howard Johnson's Motor Lodges to study various aspects of and approaches to management; are required to set up the best bookkeeping system for their own motel; are taught to read blueprints and to understand the specifications; are shown, during construction, where and how every pipe is buried; and, by the day their motel opens, are expected, not only to know every inch of the buildings and what type of bookkeeping system to use, but to understand and to know the laundry situation, the labor market, and the local sight-seeing spots. The teams are able to open and to operate the motels with confidence. With this type of training, a husband and wife team in Georgia, with no previous experience, achieved a remarkable occupancy rate of a little over 94% in the first six months of operation. This may explain to some extent the success of Howard Johnson's motels. Centralized advertising and teletype booking are two other reasons.

Since most managers work an average of sixteen hours a day and are ready for emergency calls during the other eight, many are provided with living quarters in the motel, consisting usually of a combined living and dining room, bedroom, kitchenette and bathroom. Many use rental units, but find them inadequate as permanent living quarters. Some managers prefer to have some change of environment and live out. Moreover, many owners find that they cannot replace managers freely if it means evicting the manager's family from the motel proper, and, therefore, prefer to have them live in other accommodation. In Texas a manager was found living in another motel two blocks away from the one he was operating.

The number of maids required to service a motel depends, of course, on the number of rental units and the quality of the operation. The ratio of the number of rental units to one maid varied from five to 14 to one, with the average at ten units to one maid. With a ratio of 12 to one or more, the maids tend to skip items such as toilet bowls, bath tubs and mirrors (to the consternation of female guests). A manager in Florida reports that housewives are more conscientious and competent than single girls and that shorter working hours are conducive to greater efficiency. He, therefore, hires local housewives on part time basis, at a ratio of five to seven to one. Many owners and managers use daily spot check method to keep the maids on their toes and hold weekly meetings to iron out their difficulties and to obtain useful suggestions. The ratio of rental units to maid must be settled prior to the commencement of design. Without it, the maids' linen closets and storage rooms are bound to be ill located and ill sized.

The various miscellaneous items related to the rental units–spare cots, utility beds, cribs, mattresses, blankets, chairs, tumblers, etc., are placed in the hands of the head maid or, in many cases, are the responsibility of all the maids. Therefore, their storage is best related to the maids' storage areas.

Most operators agree that a laundry facility, in motels with less than 50 rental units, is uneconomical. Even the owners of larger motels claim that reliable laundry companies can eliminate many headaches and that their charge is only slightly higher than the owners' own cost. Moreover, many owners have arrangements with laundry companies for quick pick-up and delivery valet service.

A maintenance shop with facilities for making minor repairs and storing gardening equipment is considered mandatory for every motel, large or small. Some owners make arrangements with nearby gasoline service stations for a pick-up and delivery car wash and, in one case, a free nightly windshield wash.

Many motels, especially the chains, have abolished the practice of erecting *"No Vacancy"* signs and operate 24 hours a day. If guests arrive after their own establishments are full, the management phones other local motels and makes arrangements. Such thoughtfulness is much appreciated by tired travellers and is not soon forgotten by those seeking accommodation at two o'clock in the morning.

It can be concluded that, from the pure management point of view, the architect is expected to understand the operation, the importance of rental unit to maid ratio, the management trend, and be able to translate these, with planning and careful selection of materials, equipment and details, to provide a pleasant background for an outwardly friendly and relaxed, but inwardly efficient, management.

NUMBER OF RENTAL UNITS

"What is the ideal number of rental units for a motel," is a question that this writer has been asked several times and, in all sincerity, had to admit to no knowledge of a magic number. It depends greatly on the individual operator and to a large extent on the economics of the site. Even the chains were not able to supply a definite answer to this question, although the instinct in many told them that the number is 40 or more. It is felt that those with less than 40 units must eliminate several amenities, such as swimming pool, shuffle board, landscaping, etc., to avoid disproportionate spread of cost; and that the reduction in the number of amenities causes compounded reduction in business. Many commence with about 40 to 50 units, providing all amenities financially possible, and then, gauging the degree of success, expand to meet the demand.

LANDSCAPING

One of the amenities noticeably lacking in almost every one of the motels visited by this writer was landscaping. Money is poured into the building, but little trickles out to the landscape architect. Even the most luxurious motel in New Orleans, with shops, dining and dancing halls, cocktail bar and 300 rental units was suffering from lack of vegetation and lack of imaginative and practical landscaping. A checker board pattern that flows freely off the architect's drafting board is insufficient, inappropriate and, in many cases, downright inconvenient. The landscaping does not need to be expensive. It requires only a little imagination, ingenuity, and a thorough knowledge of the outdoor uses. In Canada, where building footings must be extended into the ground three feet six inches or more to avoid frost, the surplus material that comes out of the ground does not need to be trucked away, but can be used to create sodded or mossy mounds and enclosures, which, without expense, increase privacy, act as noise baffles and add to the visual definition and delight of outdoor spaces. A practical but imaginative handling of outdoor space contributes greatly to the character and quality of the motel.

LOCATION

In selecting a site, the architect's practical knowledge and ability for rapid assessment are invaluable to clients.

As Ellsworth Statler, the prominent hotel man, says, "There are three factors involved in the success of a hotel. First factor is location; the second factor is location; and the third factor is location." Although proper location does not provide the answer to all motel problems, the quality and quantity of potential guests is definitely dictated by it. There are varieties of motels – the downtown motel-hotel enticing the business men, the airport motel serving the air travellers, the resort motel catering to vacationers, the highway motel attracting the transient travellers. Each by its intention limits the choice of sites, and, conversely, the site settles the intention.

FACTORS TO CONSIDER IN THE SELECTION OF A SITE

1. *Attractions in the area: (entertainment centres, natural phenomena, number of businesses, etc.) and the driving time from them to the site.*
2. *Number and quality of other motel facilities in the area.*
3. *Character of the area: Is it blighted, drab, or vital?*
4. *Local demand for public facilities: banquet hall, meeting place for the service club, small convention, etc.*
5. *Local labor market.*
6. *Types of businesses and community services available near the site.*
7. *Public utilities available.*
8. *Hazards: (a) Noise including jets, trains, autos and factories; (b) Smoke from surrounding industries; (c) Smell from dumps and stockyards.*
9. *Traffic count.*
10. *Accessibility of the site.*
11. *Topography of the site.*
12. *Orientation for: (a) Sun; (b) Prevailing summer breeze.*
13. *View.*
14. *Prominence of site from the road.*

What are the prospective guests seeking in motels when they are ready to retire for the day? Some of the requests most often repeated are as follows:

Newness. A sense of "contemporariness". With their up-to-date automobiles, they are seeking as one man said, "something equivalent in quality and newness to my house and car."

Informality. "None of the stiff hotel jazz." They are seeking freedom from tipping, pretention and uneasiness.

Comfort.

Convenience. Easy registration, easy access to unit and self service are mandatory. Registration without leaving the auto is appreciated by many.

Safety. Many guests are concerned about safety, especially from fire. They prefer motels to hotels because motels are usually low horizontal buildings. Also, for this reason, some have stated that they will never stay in motels of frame construction, nor in motels more than two storeys high.

Parking as close to the rental unit as possible. This writer has discovered that there is a reason beyond convenience for this. To many guests the automobile is their most valuable possession and in a new and strange surrounding they feel happier if it is parked close by.

Shelter over car unloading area. The appeal of this is strong in Canada where rain, snow and sleet are common.

Place to meet other people. This request came predominantly from travelling salesmen, especially those working on commission. They find nights lonely, but cannot afford costly entertainment every night. A public lounge with a fireplace was one suggestion.

Amenities. Although it is a fact that most guests never use a swimming pool, they register only at motels with this facility, as one party said, "just in case I get the urge". The swimming pool is now becoming a necessary part of a successful motel in Canada although the useful period of an outdoor pool in Canada is limited to about three months per year. In a larger motel an enclosed pool is worthy of consideration. Other outdoor amenities that are attracting guests are: wading pool for children, dog kennel, baby sitting service, putting green, shuffle board, tennis court, children's play area (swings, slides, etc.), croquet.

These are amenities which many motels are already providing south of the border, and some of which the Canadians must provide in order to capture a part of the same market. However, with our longer winter, the provision of all the amenities mentioned above becomes impractical. Possibly the solution is to take advantage of our winter and design such amenities as the tennis court and swimming pool so that they can be converted into a skating rink, or create snow or ice mountains, with tunnels and slides, out of snow plowed away from the parking areas. These may be expensive operations, but it is thought better to keep the occupancy rate high than to let the motel go to waste. Moreover, with strings of colored lights and spotlights a feeling of the Canadian winter carnival can be captured. The writer's office is designing an underwater propane burner which will allow red, orange and blue flames to dance on the surface of a pond under a waterfall in the summer, and orange flames on ice and snow in winter. These are things the architects must consider, foolish though they may sound now, because they provide "atmosphere" which attracts customers.

In the interior of the rental unit the guests are demanding items which, they consider, add to the convenience, comfort and cleanliness:

Writing desk.

Full length mirror.

More convenient planning to avoid morning congestion in the bathroom. Provision of two basins, one inside the bathroom and another outside in the dressing area, has become a trade mark with the Howard Johnson chain.

Tiled bathroom. The writer has found that women are extremely particular about the bathroom. *Cleanliness* is the first requirement. Every item in this room must be selected to appear clean. Several women have emphasized that they dislike colored bathroom fixtures because the color tends to hide the dirt, but "a white fixture has to be clean to appear clean". Many women will not sit in strange bath tubs. They prefer to shower but often forget their shower caps. Many motels provide complimentary plastic shower caps. However, an ideal solution is to have a tub with a shower screen and an adjustable shower head. The adjustable head allows flexibility – permitting shower from the neck down for women, gives independence to children, and acts as soothing water therapy for the tired drivers.

Supplementary heat in the bathroom. Infra red lamps and heater fans on timer switches are now installed in many motels.

Television with a coin slot is archaic and considered by many to be an insult. Free TV is a mandatory equipment. Remote control by the bed is a standard equipment in the newer Hilton Inns.

Radio, with local stations as well as straight background music is a standard equipment. With the increase in the popularity of Hi-Fi, better quality speakers are suggested by music lovers. In the latest Hilton Inn the radio is incorporated into the TV set and the control for it is on the same remote control as the TV.

Telephone in each room is becoming a standard equipment. Many motels allow free local calls.

Ironing board and iron are requested by many women and salesmen. There is now on the market a completely packaged unit which contains a folding ironing board and an iron and which can be built into a wall space.

Bars, bar sinks and refrigerators are fast becoming popular items with the salesmen and businessmen who are holding more and more business meetings, conferences and conventions in motels. In a motel outside of Washington, DC, the owner provides facilities for outdoor conventions. At the Motel on the Mountain outside of New York City, there were over 200 official conventions booked for the coming year and the owner estimated that the total would reach 300. Many businessmen prefer the informality and the relaxed atmosphere of the motels to hotels. Many large corporations book several rooms all year round for meetings and for travelling sales staff.

Automatic coffee dispenser, which serves free instant coffee, is featured in every rental unit by one chain. A tired traveller is appreciative of being able to drink a cup, lounging on the bed, with his shoes kicked off. He enjoys the atmosphere rather than the coffee. However, this equipment can be a disadvantage to those owners who depend on motel guests for the success of their restaurants. A guest ordering coffee by phone will invariably order other food. For a piping hot meal, he is usually enticed into the restaurant. With the automatic coffee dispenser in the unit, a tired guest will forego a meal and retire after a complimentary cup of coffee.

The restaurant itself is becoming a mandatory part of a motel. About 90% of the guests with whom this writer conversed preferred to stay in a motel with a restaurant. Most guests prefer to have at least a hot cup of coffee in the morning before stepping into their automobiles. Many pointed out that they prefer a restaurant that is attached to the motel or is connected to the motel with at least a covered walkway.

Balcony and patio. Most people want a balcony and a patio, even when they know that they will be used for no more than two minutes. Many owners have stated that "without the balcony on the second floor not many will want to occupy the second floor". The main floor units with a patio are the most popular. "Most people are lazy, they don't want to climb stairs." "The fear is fire." It is concluded by most owners that the motel should be no more than two storeys in height, otherwise, "it becomes a hotel-motel with all the disadvantages of the two and none of the advantages."

Temperature control for summer and winter. A noisy air conditioning unit is one source of complaint. The individual window units most frequently used and the little more elaborate fan coil units are both too noisy for aural comfort. Moreover, the control of room temperature imposes a problem. When the writer is travelling with his wife there is always a slight quibbling regarding the temperature. He likes it cool, his wife likes it warm. (Guess who always wins). When this problem is multiplied by 100, one could see the heating and cooling problem faced daily by the management.

Every architect spoken to has stated that the mechanical equipment is one of the big headaches in motel design. To date the mechanical solution is dragging far behind that of design. Even the mechanical engineers admit that most mechanical solutions are "useless". It is this writer's belief that the solution must incorporate two things: individual control in each unit, and the elimination of noise. The solution seems to point to some form of induction system, high or low velocity; to a system that allows the owner to shut down the temperature in portions of the motel during the off-peak periods; and to a system which allows the management to set the average and the guest a flexibility of 25% to 30%.

In the design of the exterior, sun control can greatly reduce the cooling load in summer and heating load on sunny winter days, thus reducing the cost of operation. This cannot be over emphasized.

Variety of units. One of the main complaints this writer heard, especially from salesmen, is the feeling that "I have been cheated." "There was only me, but I had to accept a room with two beds. I hate to think I had to pay for a bed I didn't use." Often the manager does not charge a guest more for two beds than one, yet this feeling persists. To avoid this, a variety of rental units is essential in a motel. The most popular types are: one double bed, two double beds, one double and one single bed, two single beds, three single beds, one double and one convertible sofa-bed, two studio type beds; and delux, with bedroom with two double beds adjoining a main sitting room with two studio beds.

The percentage distribution of these various types differs from area to area, even from block to block, hinging basically on the type of guests and the duration of stay.

The interconnecting of units by means of a private door adds flexibility. The connecting doorway must be designed to prevent noise penetration. Since many guests dislike having doors to other units on grounds of privacy and security, the percentage of connecting units must be carefully selected. Between 20% to 30% is considered effective.

Kitchenette unit (with cooking elements, storage, and refrigerator) is popular with travelling families, especially at terminal points. However, many owners are finding they result in added maintenance because of the cleanliness problem, not only of the unit itself, but of the flooring and walls in the whole room.

Furnishing that appeals to the public has, in general, qualities of comfort, contemporariness and an air of being custom built for that particular motel. On the other hand, owners are demanding that all furniture be designed to last and be maintenance free. In a chain operation or in a large motel, a wise owner will commission

an industrial designer or an interior designer, not an interior decorator, to work with the architect in fulfilling these requirements.

Size of rental unit. The public is demanding more and more space. The minimum standard set in Ontario of 180 square feet (10′0″ x 18′0″) inclusive of entrance and bathroom is no longer good enough. In the newer motels, the overall average is 350 to 375 square feet with many exceeding 450 square feet. The size depends on the location and the trade, transient or terminal; but the guests who have tasted larger spaces definitely will not be satisfied with our minimum standard in Canada. They want space for sitting in comfortable lounge chairs, elbow space around writing desk, comfortable space around the beds, and sufficient space to wash and dress conveniently. The absolute minimum, in this writer's opinion, is 300 square feet per unit.

Broadloom in the main room adds greatly to the sense of luxuriousness and is fast becoming a mandatory requirement. It can also be economical, and the architect can prolong the life of a broadloom by dimensioning the room to allow it to be turned 90 degrees.

Color schemes which the guests accept, in general, fall into an analogous scheme with dashes of bright colors in cushions and paintings. However, a variety of color schemes is suggested for the single reason that if one scheme does not satisfy a guest there are others that may. An analogous color scheme reduces the number of different color bedspreads, towels, etc., thus reducing the time spent sorting out proper items for each unit. The ideal solution is to have several analogous color schemes which will accept a basic set of color equipment. Moreover, wood panelling, exposed brickwork and plasticized grass cloth wallpaper are becoming popular.

Other miscellaneous items requested: barometer, light coves on rheostat control, live plants. It must be noted that only green leafy plants are acceptable. Some guests are affected by pollen and many friendly gestures on the part of the owners have backfired.

WHAT THE GUESTS DO NOT WANT

What the guests in motels do not want are the following:

Gaudy and pretentious design.

Over decorated interiors. Over stuffed furniture and fluffy bed covers to many represent "the hiding places of germs".

Many storage cupboards and drawers. They are never fully used by transient travellers and are sources of annoyance for those who, in a hurry to leave in the morning, tend to forget things in them.

Noise. The stamping of feet above, the loud conversation in the next room, the blaring of automobile horns, and the grinding of gears are annoyances due to penetration of sound from outside the room. A judicious arrangement of buildings in relationship to the exterior sources of noise and careful landscaping can effectively reduce the sound transmission; however, only good construction can eliminate the undesirable level of noise penetration. Materials must be selected and used to cut down the transmission of sound by at least 45 to 55 decibels.

COSTS

There is a definite relationship between good design and good business. Moreover, there is a relationship between good business and the amount of amenities provided. However, to incorporate every wish of the auto driving public into a single motel becomes a financial impossibility. The cost of each unit may rise to $15,000.00 to $20,000.00 or more. It then becomes a matter of compromise and an intelligent selection of what the public will want most. Since the owner cannot sacrifice design and sound construction, it becomes a matter of selecting the guest-attracting amenities. Some of these are frivolous, but as one owner remarked "People on trips are in a frivolous mood". The selection depends on the type of operation and the type of guest the owner wishes to attract. Nevertheless, there is a minimum that the owner must spend to have a financially successful venture. From what this writer has seen, heard and experienced, with successful motels operating at occupancy rates higher than 80%, the average cost, excluding such facilities as restaurant and cocktail bar, but including the office and furnishing, is $10,000 per rental unit (1959 and 1960 figures). As one prospective owner in Canada said, "Unless a person is willing to spend $10,000 per unit, it isn't an investment, it's a noose". A good location is a great asset, but it cannot compensate for shoddiness or physical obsolescence. This cost applies especially to motel investment in and around any urban centres in Canada.

In closing, the writer is reminded of two things. One is what a party said in Texas, "What I like to see in Canada is something Canadian". Possibly, as this man said, one way for motels to succeed is for architects to capture in their design the feeling, perhaps not of all Canada, but of the local region. The other is the statement made previously in this article that "There are only two things that sell a motel: one is service; the other is design". In this the architect must carry more than a lion's share of responsibility for the future success of motels in Canada.

Parkway Motel

Ottawa

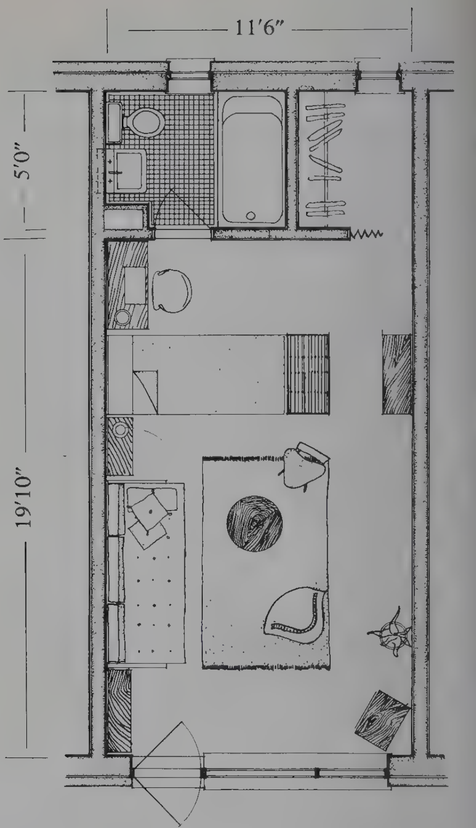
Architects

Greenspoon, Freedlander & Dunne, Montreal

Owner-Builder

Bourque Brothers, Ottawa

Construction is re-inforced concrete with block walls, brick veneer and wood trim. The interior is plaster throughout with tile bathrooms, wall-to-wall carpeting and acoustic tile ceilings, and individually controlled air-conditioning. Each room has a telephone and free radio and television. Management arranges car washing and servicing, and laundry service. The dining room also provides room service. Conference and meeting rooms are available.



Typical Unit

Number of Units – 61
Total Construction Cost – $600,000
Unit Cost – $11,100

PHOTOS BY TED GRANT, PHOTO FEATURES

View from Rideau Street



Lobby



Typical Unit



Parking Area from Balcony



Sherwood House Motel

Regina

Architects

Black, Larson, McMillan & Associates, Regina

Owner-Manager

M. Ratner & I. Goldstein

General Contractors

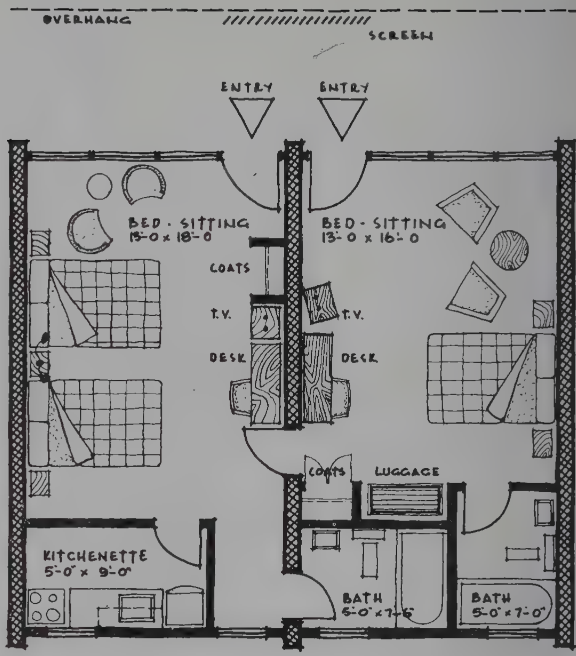
Stage 1 – Don Jorrisity Construction Ltd, Regina

Stages 2 & 3 – Bird Construction Co. Ltd, Regina

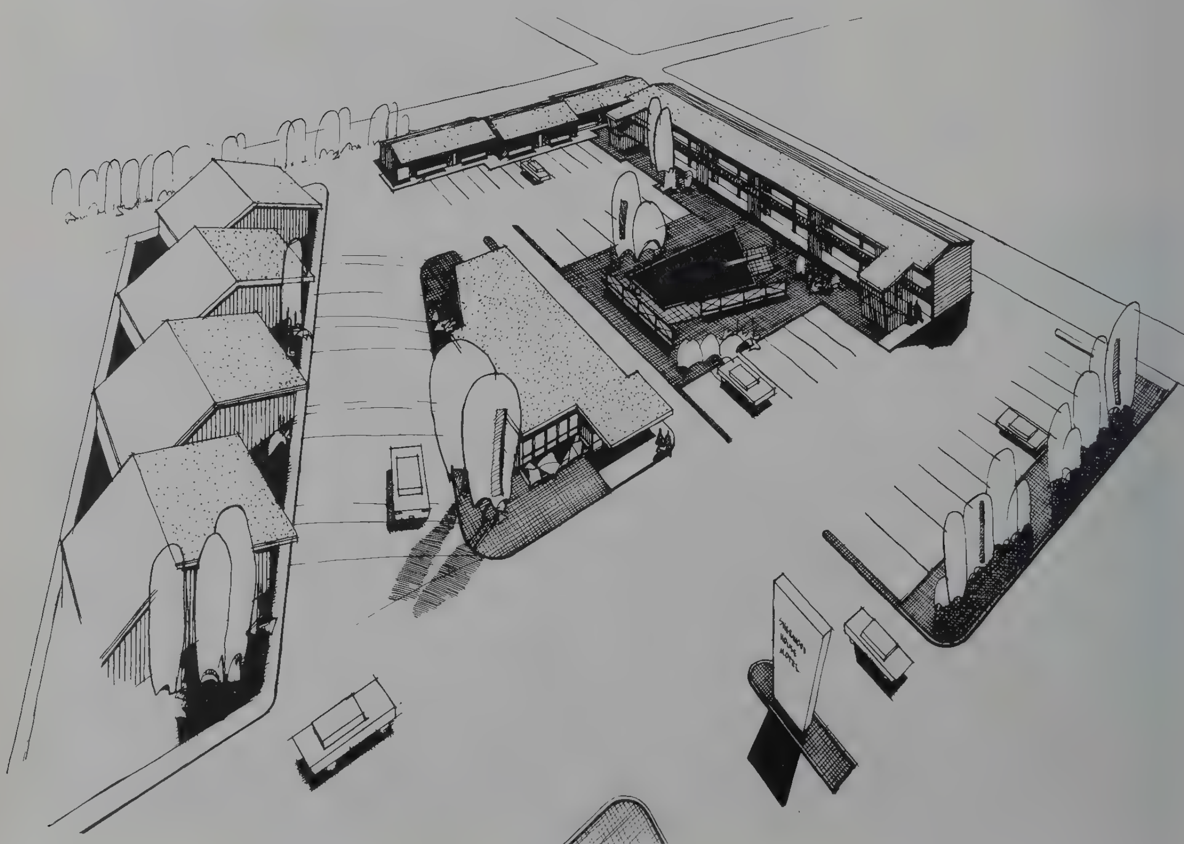
Total Cost – $275,200

Number of Units – 49

Average Unit Cost – $5,616



Typical double and single unit plans



The motel was constructed in three stages. The first, in 1954, a single storey structure, consisting of sixteen units with office and residence. The cost was $1,800.00. A twelve unit, single storey, addition was started in 1955 at a cost of $48,600.00; and the third stage, a two-storey structure with 21 units was added in 1960 at a cost of $125,800.00. The costs do not include interior furnishings. The design allows for units to be rented as two-unit suites if required. Alternate units in Stages 1 and 3 have kitchen facilities. Radio and television are provided in each unit without extra charge and each unit is equipped with a telephone, operated from an exchange in the office. A restaurant is under consideration.

Construction generally is wood frame with wood floor and roof joists. Foundations are grade beam and piles. Exterior finishes vary from sheet plywood painted, vertical cedar siding stained, to concrete block painted. Windows in units 1 and 2 are double hung aluminum, and in unit 3, awning type double glazed in wood sash. Interior finishes are plasterboard painted, mahogany panelling varnished, glazed tile in washrooms, concrete block painted with plasterboard ceilings and carpeted floors. Walls and floors separating units are sound-proof. Heating is by hot water with individual room controls. Air conditioning is being considered.

PHOTOS BY DON WEBB



General view stage 3



Units constructed in stage 1

Typical unit stage 3



Typical unit



Downtowner Motor Hotel

Winnipeg

Architects
Pratt & Lindgren,
Winnipeg

Owner-Manager
Alex Dugalle

General Contractors
Bird Construction Co Ltd

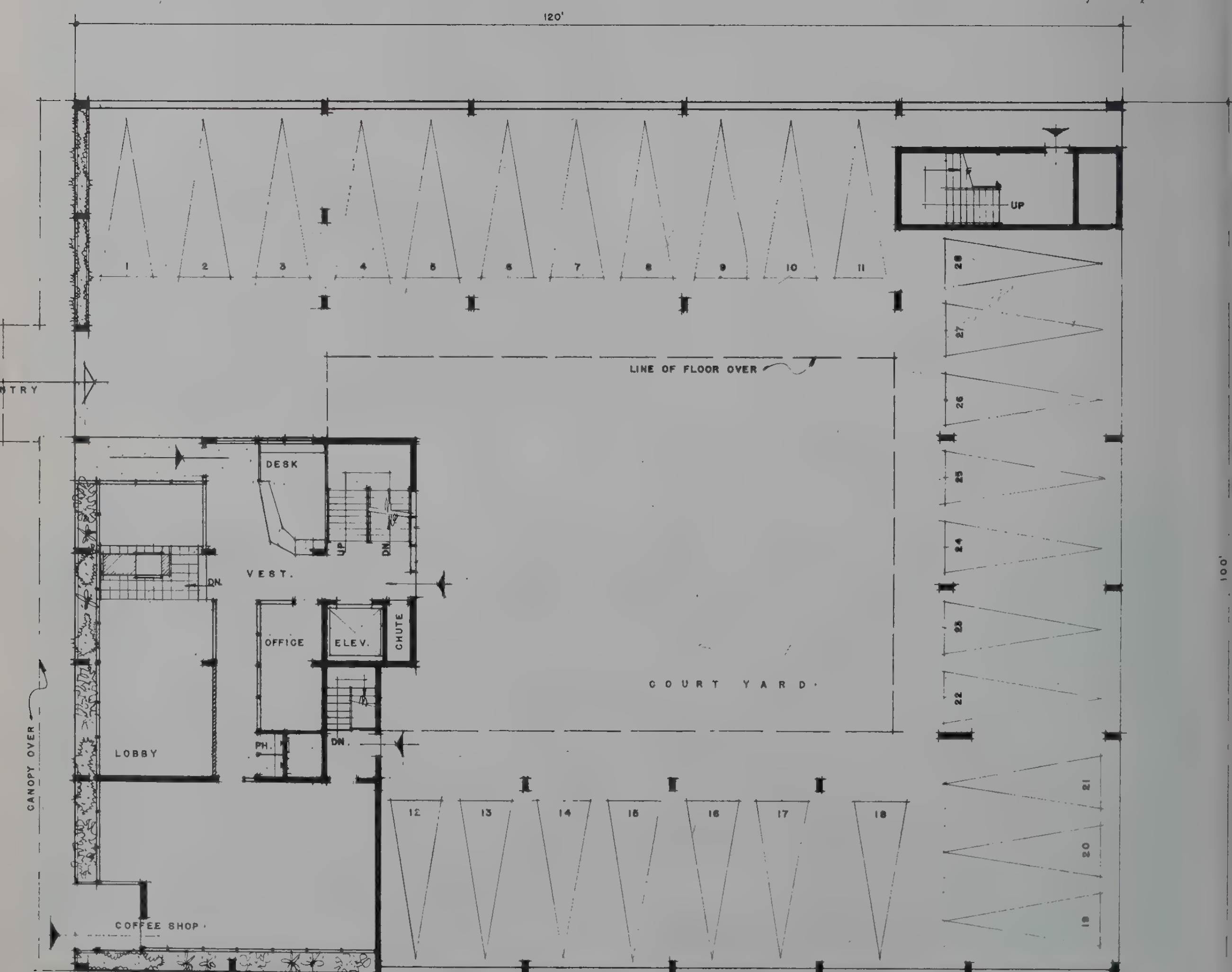


Night view showing car and restaurant entries

Number of Units – 42
Total Construction Cost – $430,000
Unit Construction Cost – $10,238

PHOTOS BY PORTIGAL

First floor plan





View of lobby and reception area

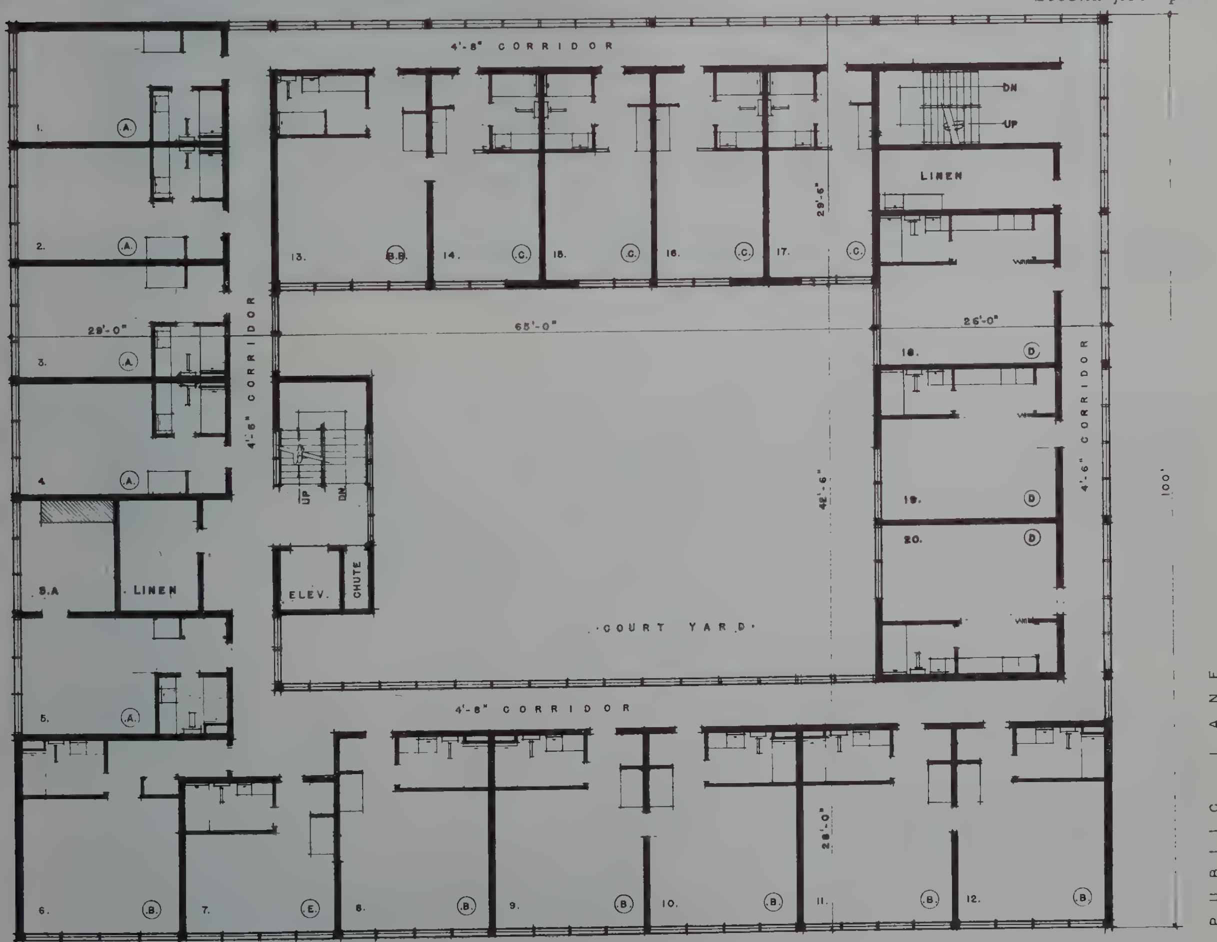


Typical unit

Construction is reinforced concrete and masonry panel walls. Concrete columns and beams support concrete (removable steel pan type) floors. The masonry panels under the windows are faced with glazed tile. Windows are patent double glazing. Bathrooms have glazed tile walls and ceramic tile floors. Interior finishes are broadloom and natural wood. Units have individual heating and air-conditioning control in a combination of baseboard heating and fan coil units.

The restaurant provides room service and laundry service is available to guests. Each unit is equipped with telephone and free radio and television. Parking is available for 48 cars, with servicing arranged through management.

Second floor plan



Town Manor Motel

Hamilton, Ont.

Architect
Joseph B. Singer
Hamilton

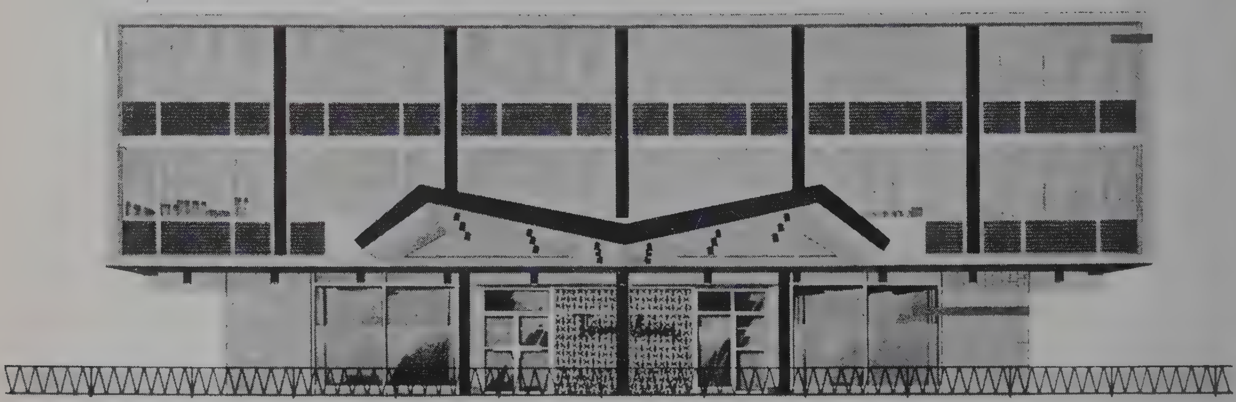
Owner-Manager
T. Iwan

General Contractors
Sovereign Construction Co. Ltd



CUNNINGHAM & REID LTD.

Cost of Construction – $220,000
Number of Units – 40
Unit Cost Approx. – $5,500



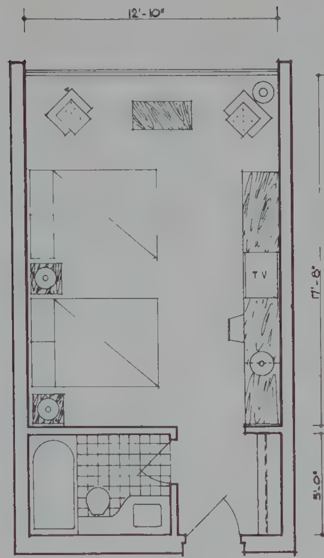
Located in downtown Hamilton, the motel has both twin bed and bed-sitting units, and conference and sample rooms as well as banquet accommodation for up to 100 persons. The restaurant provides room service. Each unit has radio and television without extra charge. Laundry service is available.

Construction is steel and reinforced concrete with exterior finish in white and black speckle and black glazed brick. The entrance canopy is steel frame with aluminum roofing. The interior is plaster, painted, with all units and corridors carpeted. Floors in lobby and coffee shop are terrazzo and unit bathrooms are finished in ceramic tile.





Town Manor Motel. The Coffee Shop



Typical Unit

Town and Country Motel

Aldershot, Ont.

Architect

Joseph B. Singer
Hamilton

Owners

M. Reiss, F. Fisher and O. Hamilton

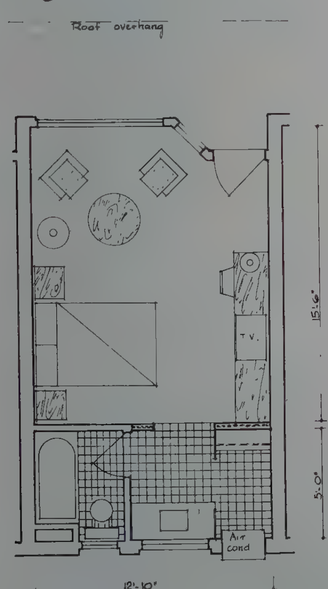
Cost of Construction – $125,000

Number of Units – 28

Average Unit Cost – $4,500

Construction is buff brick with cedar siding and panelling. Interior is exposed block painted with one wall in each unit finished in mahogany plywood and Spectraglaze block in bathrooms. Ten units have individually controlled air-conditioning.

The motel has single, double and family rooms, each with separate bathroom. Television is provided in each unit without extra charge. Coffee only is available in the lounge.



Typical Unit

TOM BOCHSLER



Silver Dart Motel

Baddeck, N.S.

Architects

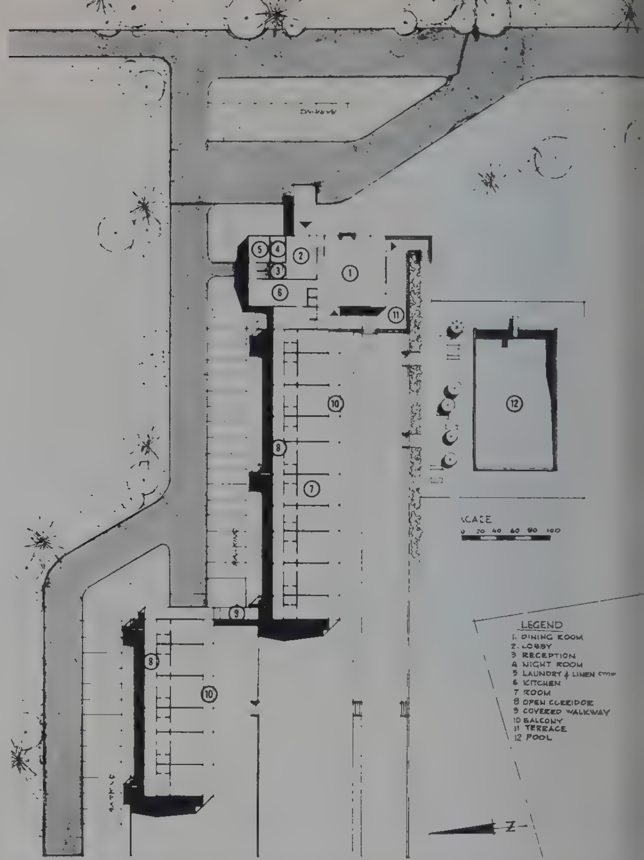
Keith L. Graham & Associates, Halifax

General Contractor

T. P. Llewellyn

Located on the popular Cabot Trail and at the locale of the first successful airplane flight in the British Empire, the building provides both guest accommodation and dining service for visitors. Unit furnishings were partially imported from Denmark and partly built in teak by a local craftsman. The Nova Scotia artist Joseph Purcell has been commissioned to do 35 water colors for the units and lobby.

Construction is of wood, with the exterior finished in cedar shingles. All units overlook the Bras d'Or Lakes. The grounds were landscaped by William Ellerbrok.



Site Plan

PHOTOS BY WRIGHT STUDIOS

Sun Deck, with View of Bras d'Or Lakes





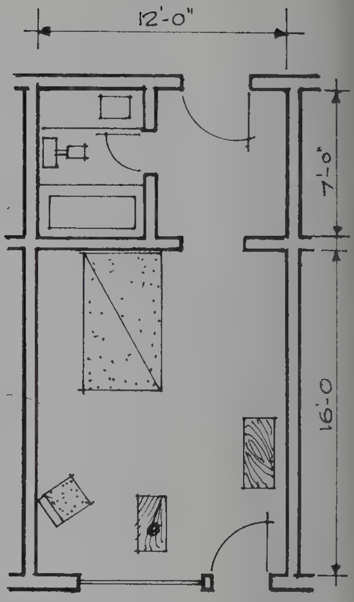
Outside View of Dining Area



Upper Floor Gallery



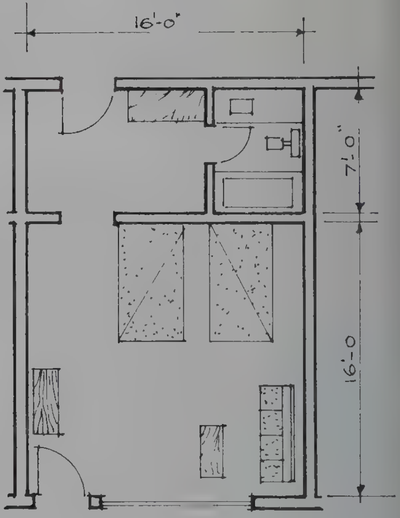
1



Plan of Single Unit



2



Plan of Double Unit

1. Entrance, showing Dining Area

2. South West View, showing connecting link between Unit Blocks

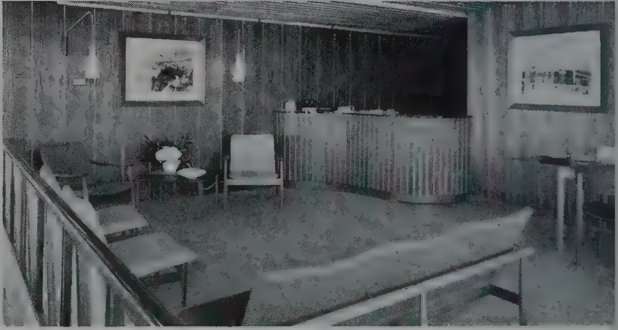
3. Dining Room

4. Reception and Lobby Area

3



4



Study of The Listowel Arena Collapse

Constructive study of failures in building and construction usually results in valuable information that can be applied to future practice in engineering and architecture. Tragic though serious building failures may be, if used in this way they can assist in advancing design and construction procedures for the ultimate benefit of the public welfare. It was with these objectives in mind that the failure of the Listowel Arena was critically studied jointly by the Division of Building Research of the National Research Council, the Forest Products Laboratories of Canada, and the Department of Civil Engineering of the University of Toronto. A complete study of the failure prepared by W. R. Schriever, D. E. Kennedy, and Professor C. F. Morrison of the organizations noted has recently been published. Copies of the report ("The Collapse of the Listowel Arena") can be obtained from the Division of Building Research, NRC, in Ottawa (Order No. NRC 5684).

IT WAS ON THE MORNING of Saturday, 28 February, 1959 that the arena in the small town of Listowel, Ontario suddenly collapsed while a boys' hockey game was in progress. Seven boys and one adult were killed and thirteen boys were injured. Immediately following the collapse, a number of authorities were charged with the investigation of the causes of failure and an inquest into the reasons for the collapse was ordered by the Attorney General of Ontario.

The inquest was held from 17 to 20 March in Listowel and more than 100 witnesses testified on various aspects of the collapse and of the arena building. The inquest was conducted by Mr Eric Silk, QC, Assistant Deputy Attorney General of Ontario. This inquest brought together a large amount of technical information which, together with the results of other studies, has now been condensed in the general report already noted.

The building was 240 ft long and 110 ft wide with seats for about 1,000 spectators. The walls were made of concrete blocks 8 in thick and approximately 20 ft high with the wall thickness doubled at all truss supports. The curved roof of the arena was supported by bowstring glue laminated timber trusses spaced 20 ft apart and spanning the 110 ft. Between trusses the roof was carried by wooden joists 1-5/8 in by 13 in in cross section and 20 ft long, the roof deck consisting of 1-in wooden boards. At one end of the arena was a concrete block structure housing dressing rooms, etc. This did not collapse but the wooden arena structure was almost a complete loss.

At the time of the collapse the roof of the arena was supporting a snow load. Snowfall during the winter 1958-59 had been 30 per cent above normal in the Listowel area by the end of February. Three days before the collapse, the total fresh snowfall had reached 70 in and the depth of snow on the ground was 24 in. The day of the collapse was relatively mild, the temperature rising to freezing point. Some rain had fallen during the previous night. Because of the heavy snow load on the roof, some had been removed on 7 January but none was removed between that date and the collapse. Measurements made immediately after the collapse indicated a weight of snow on the roof at one point of 55 lb per sq ft and at another point on the same side of 75 lb per sq ft. This and other evidence indicated that the snow had been unsymmetrically distributed being mainly concentrated on the north side of the roof due to drifting and exceeding at points the design load shown for the Listowel area in the National Building Code of Canada.

Careful study of the laminated wooden trusses after the collapse showed that the gluing in the curved upper chord members was of poorer quality than in the straight lower chord members, there being many open glue lines and delaminations. The conclusion was inescapable that the trusses had not been fabricated in the best manner and had not been inspected by a professional engineer or architect before erection.

Calculations showed that even with a design snow load much less than that recommended by the National Building Code of Canada, both top and bottom chord sections of the trusses, assuming good fabrication, would have been overstressed in relation to recommended working stresses in the appropriate specification of the Canadian Standards Association. Since the snow load was considerably greater than the figure assumed in these calculations and since its actual distribution was unsymmetrical, it is clear that the design was not adequate for the purpose to be served, quite apart from the imperfections in fabrication.

Conclusions drawn from this study by the authors include a suggested tightening of administrative procedures for checking plans and specifications for structures such as the Listowel Arena; the commendation of the National Building Code of Canada as a document for adoption by municipalities that do not have building codes of their own; and special emphasis upon the necessity for proper supervision of the construction of all public buildings since, as the authors state, "a sound design is not enough". The authors point out that there is now available in Canada a CSA specification for glued-laminated softwood structural timber and that modern glulam fabricating plants meeting trade association certification standards are required to have considerable quality control equipment and personnel. The Listowel failure therefore constitutes no reflection whatever upon timber construction but only upon the particular trusses that were so unfortunately used for that particular installation.

R. F. Legget

Ottawa Juvenile and Family Court Competition

Report of the Jury

THE BOARD OF ASSESSORS wishes to congratulate the Corporation of the City of Ottawa and the County of Carleton upon their decision to call for an architectural competition for a new Juvenile and Family Court Building to be located on Bronson Avenue in Ottawa. The results of this competition, in the opinion of the assessors, were eminently successful.

The information contained in the conditions and specifications stated only the rooms required and the areas thereof. Therefore contestants were allowed considerable latitude in developing a solution. It was then obvious that participants would have to do considerable research in order to determine the proper integration of the various elements contained in the building, the traffic flow throughout, and should acquaint themselves with the many social and psychological problems of the people who come to this court, usually under considerable stress. Such knowledge was essential if the architect was to produce a plan which would help in handling these problems conveniently and considerately.

Although the dignity of this court is maintained at the same high level as others in Canada, it is a family court, and as such the assessors believed that the building should be more in keeping with a domestic scale and, to some extent, character, than that of a monumental public building.

Of major importance was the separation of the court section and what was called the detention section, but which could more appropriately be described as the observation section. Those contestants who realized this and provided for separate entrances, segregation, secluded recreation areas and an atmosphere as far removed as possible from the impersonally judicial and prison-like, interpreted the spirit of what was required.

The Juvenile and Family Court deals with all age groups, including infants for adoption, children, 'teenagers, as well as adults. Segregation of young from older offenders wherever possible was felt to be most desirable. Hence, a number of separate smaller waiting areas was considered a better solution than a large general waiting lobby. Consequently a special waiting area for those visiting probation officers or family counsellors was considered desirable.

The competitors realized the importance of the interrelation of the judges' chambers with the court rooms, but the advantages of a certain degree of privacy for judges requiring to see each other or making their way to the court rooms was not always appreciated.

The Board of Assessors was conscious of the complexity of the problem, and the amount of research required to provide a logical solution. The winning design by Schoeler and Barkham was the unanimous choice of the judges. It is a very competent solution. The plan is logical, containing all the points mentioned previously. It showed a thorough knowledge of the requirements, such as an unobtrusive way of bringing possibly handcuffed persons to the detention room; a convenient location at the entrance for those required to make court-ordered payments and for those collecting them; a possible second exit for those distressed persons leaving court without having to return to the waiting room, all in a most straightforward workable manner.

The exterior design is restrained without being dull. It relies on a pleasing balance of good fenestration and clean, simple wall surfaces and a knowledge of suitable building materials. It provides a vista through the entrance area into an inner court, a most attractive feature providing a prepossessing rather than a forbidding atmosphere. It is recommended that the building be terraced to approximately three or four feet above the street level to obviate what might be a criticism of placing a one-storey building on low lying ground.

The second prize winning design submitted by Peter Dickinson Associates, is a compact plan using a split level motive which was considered a very good solution. The plan provides many of the excellent features mentioned regarding the winning design, but in the opinion of the judges is not quite as practical in its plan. Furthermore, it did not appear to be as well studied, inasmuch as elevations, plans and perspectives do not correlate in all respects; columns which came in embarrassing positions in one plan were omitted; fenestration varied, and walls were moved in perspectives in order to enhance the drawing.

Choosing the third prize winning design caused the jury considerable difficulty, as there were three or four contestants who provided interesting solutions. Each, however, lacked what was felt to be some important feature. The jury's choice was the entry submitted by Charles B. Greenberg Associates, which was a fairly competent architectural solution, although some traffic flow routes appeared tortuous.

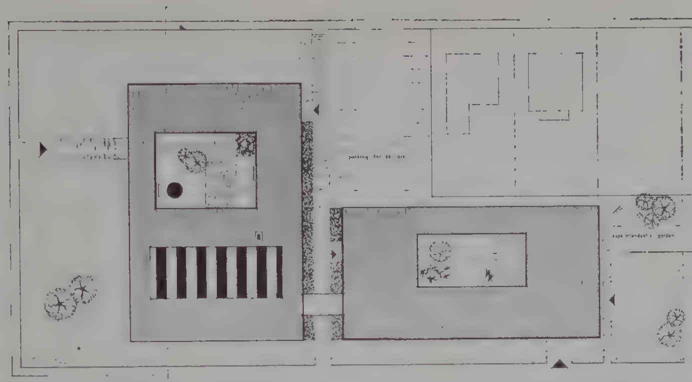
Finally the assessors would respectfully recommend to the City of Ottawa that a free-standing bronze group glorifying the family as the all-important and basic unit of our society would make an attractive addition to the Bronson frontage of the building.

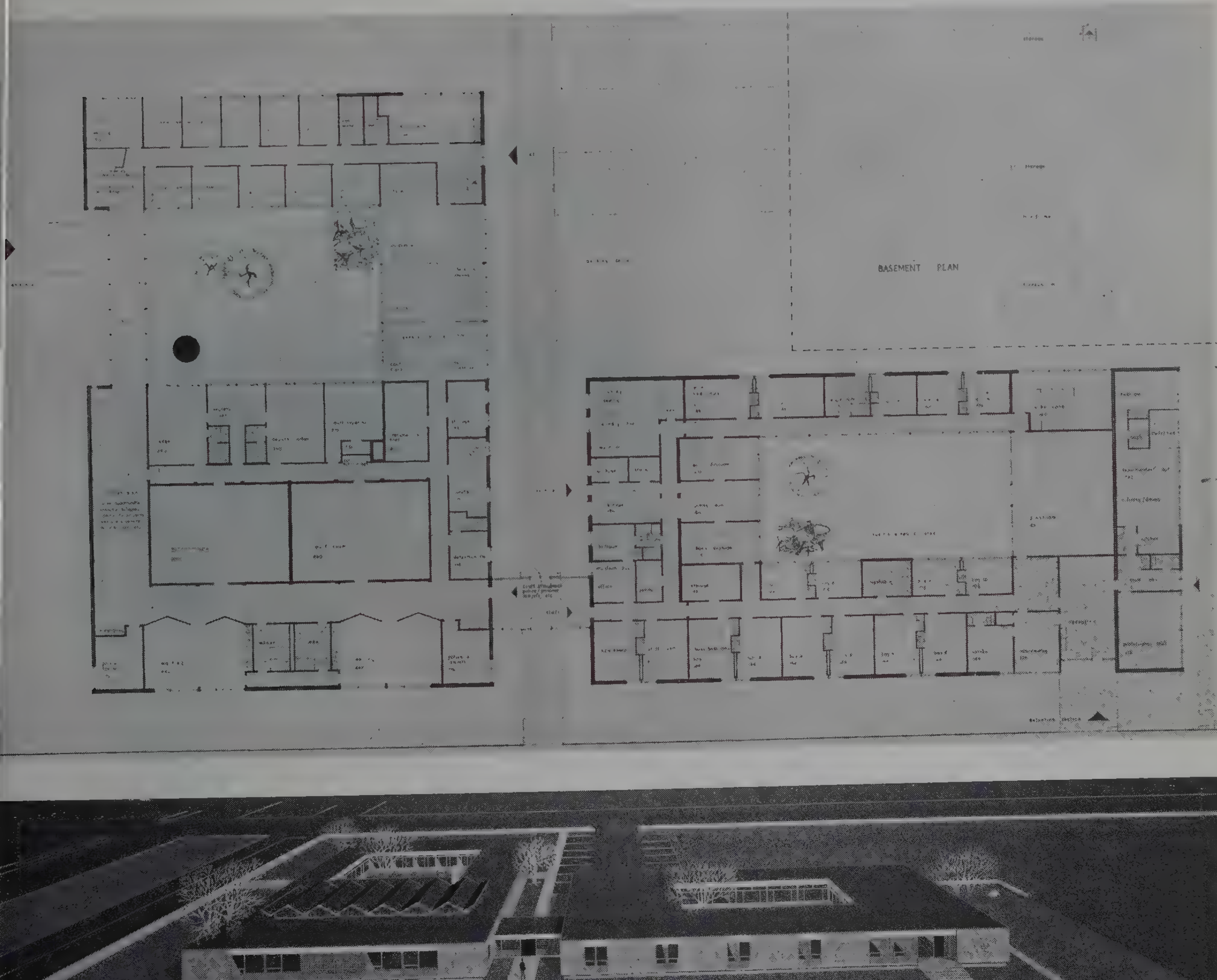
H. Gordon Hughes (F)
Chairman, Board of Assessors

OTTAWA JUVENILE AND FAMILY COURT BUILDING COMPETITION

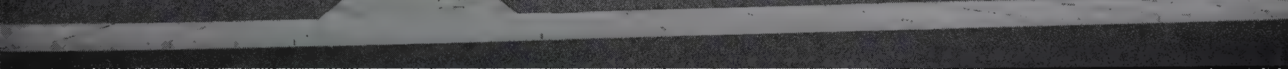
THE WINNING DESIGN

SCHOELER & BARKHAM





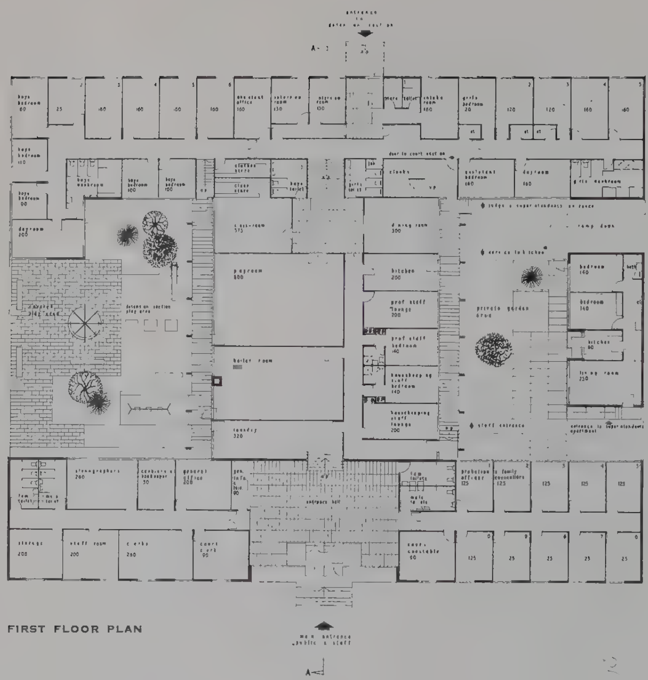




OTTAWA JUVENILE AND FAMILY COURT
BUILDING COMPETITION

SECOND PRIZE

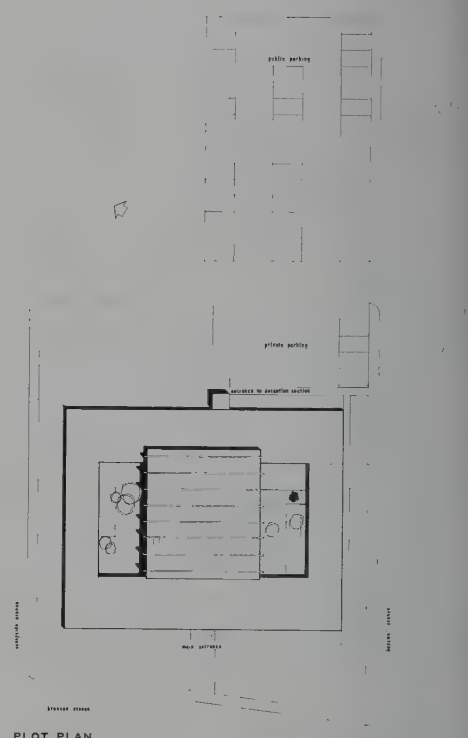
PETER DICKINSON ASSOCIATES



FIRST FLOOR PLAN



SECOND FLOOR PLAN



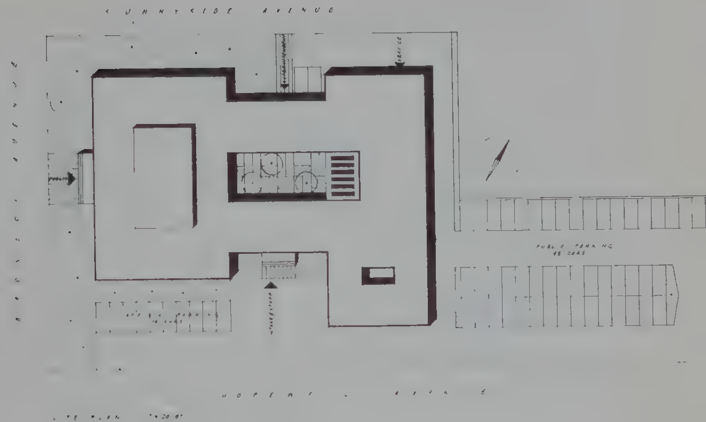
PLOT PLAN

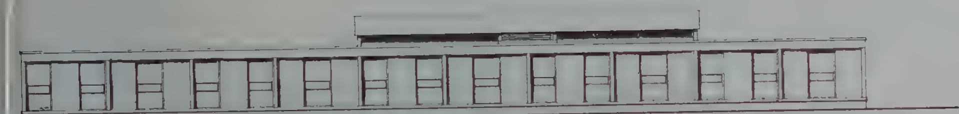


OTTAWA JUVENILE AND FAMILY COURT
BUILDING COMPETITION

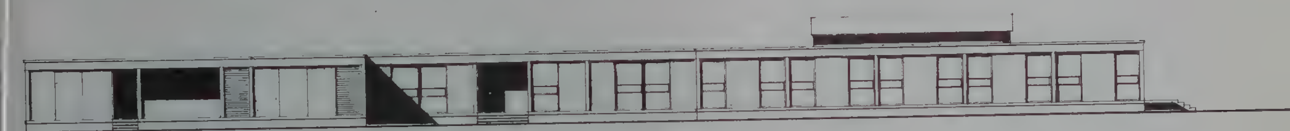
THIRD PRIZE

CHARLES B. GREENBERG ASSOCIATES





NORTH-EAST ELEVATION



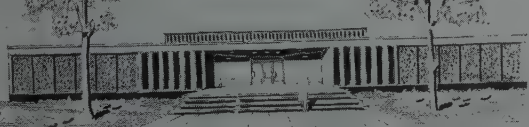
NORTH-WEST ELEVATION



SECTION A-A



GENERAL VIEW FROM SOUTH





CENTRAL INFORMATION & WAITING AREA

The New Sensualism

A SYNOPSIS OF THE ADDRESS BY THOMAS H. CREIGHTON, EDITOR, PROGRESSIVE ARCHITECTURE, AT THE ANNUAL MEETING OF THE ONTARIO ASSOCIATION OF ARCHITECTS

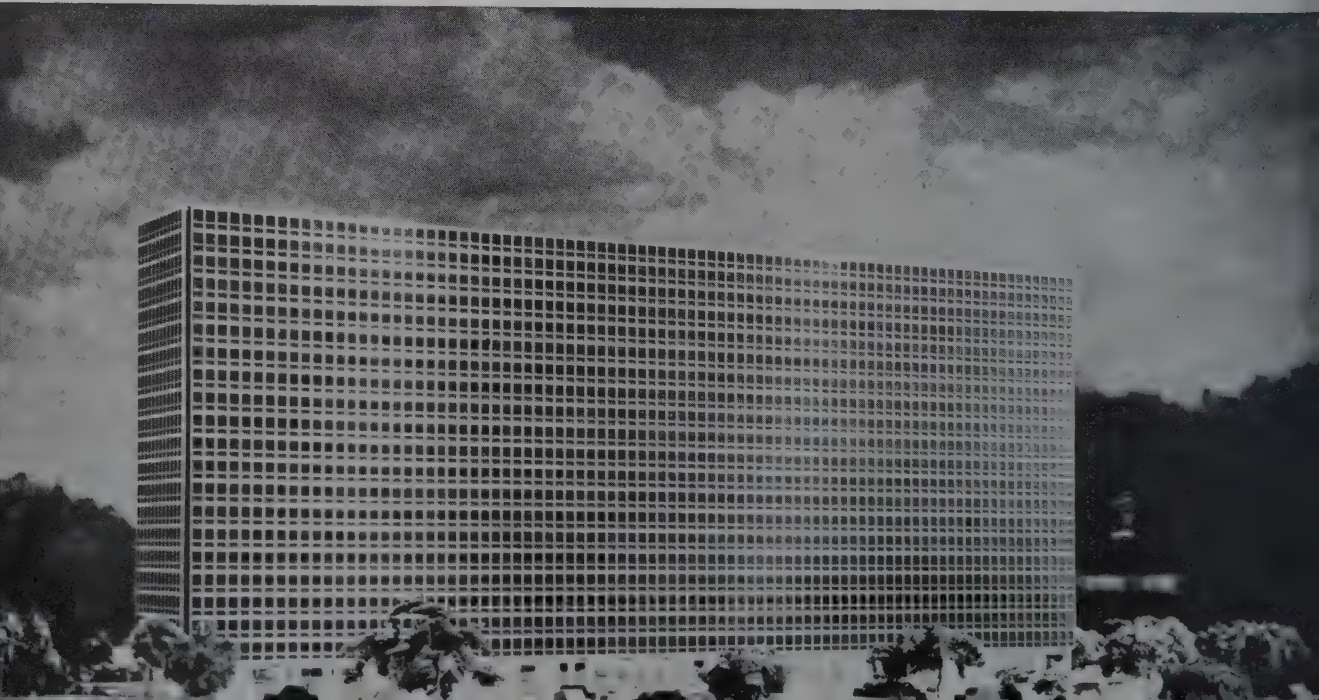
"A Revolt against the Sterility and Conformism of our Times"

ALTHOUGH I don't believe in critical essays that lump many buildings and groups of buildings in one category and invent for them a slogan with the word *New* before it, I felt that I had to invent a slogan with *New* in front of it, in order to object to slogans with *New* before them.

A certain sort of modern architecture, a certain period, has indeed arrived. It has not only arrived: it has been born, it has passed through adolescence and it has grown to frightening proportions. One sees it all over the world (Plate 1). It is an outgrowth of the early struggles to find an expression for our time which would solve today's functional, social problems better than the late Renaissance show did, and which would, both in technology and in esthetics, be up to date.

Though we see "modern architecture" of a certain sort everywhere, I feel that it is wrong to say this proves that we have *arrived*, and to believe that we are going to stop there. There are moves toward plasticism and exuberance even in the more austere work, and there is much more interest than there had been for several decades in the more gay and free aspects of architectural history – of previous times when color, texture and the imaginative use of materials and methods were important.

1. *"... it has grown to frightening proportions ..."*





3. *" . . . a frankly sculptural, sensual design . . . "*

2. *" . . . we begin to sense natural forms . . . "*



We begin to sense once again natural forms, after a period of almost fearful worship of the machine (Plate 2). This is a modern re-discovery, whether one approaches it in a romantic mood, as Wright did, and as Alden Dow poetically does, or with a scientific attitude like Gyorgy Kepes'.

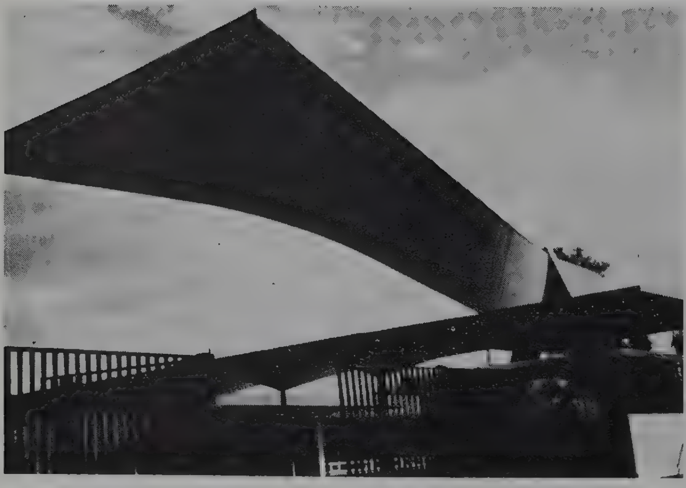
The master of this approach to an architecture which is at once modern and organic is of course no longer with us. Frank Lloyd Wright's work through most of his life was in this direction. In his later years he was still searching for form, for a more frankly sculptural, sensual design, as in the various round houses he tried, and finally in the Guggenheim Museum (Plate 3).

Another strong background to the development we are going to talk about is the opposite of the turn to natural forms (Plates 4 & 5). It is the development of plastic technology. We have now the work of Nervi as in his buildings for the two Olympic cities in Rome, which are so moving in some ways and so disappointing in others; and of Candela, who seems to have an innate sense of form, but neither the will nor the knowledge which will tell him when to stop adding architecture to his sculptural engineering. And then there is the strong, to-hell-with-design-rules approach of the more brutalist designers. Le Corbusier is the only architect of full maturity practicing on the continent today – the only man who is doing buildings that have the capacity of *moving* one – of making one say: "This is architecture!"

First I call attention to a *sensuous plasticity of surface* in much current architecture. The urge to break up the two-dimensional façade (as in Sert's Harvard Health Centre) is a fascinating one, but it has the danger of tempting one to remain façade conscious–to gain plasticity and the appeal to the senses through deep recesses, through changes in texture, and through unexpected, off-the-module elements (Plate 6).

5. *". . . rugged, brutal strength . . ."*





4. *". . . an innate sense of form . . ."*



6. *". . . the urge to break up the façade . . ."*

The next group of buildings I would like to include in the *New Sensualism* are those in which production of *visual delight* is the aim in design: the texturing or the coloring or the patterning of a surface so that it *sings* more than a flat wall does. Stone himself, in one period, worked with pierced walls lovingly, in conjunction with strong, related structural members, as at New Delhi in relation to his columns. Yamasaki is the most articulate of the "delight" school, and has carried it further than the others (Plate 7). Concrete wall members which are in themselves ornament, as well as screen walls and folded and domed roofs, are his current approach to a sensual, almost tactile architecture. It is not too great a step from relishing "delightful" – sometimes ornamented – architecture to the slightly more dangerous *romantic-expressionist* attitude. Artists through history have departed from realism in one of two directions; either romanticism (the fairy-tale-telling route) or abstract expressionism (the purely subjective, this-is-my-personal-reaction attitude). In sensualist architecture at the present time, we find these two escapes, sometimes related. We have the buildings which, frankly or not, represent romantically a thing, an object, an attitude (Plate 8). Saarinen's Idlewild TWA Terminal, representing aerodynamics, something in flight; Harrison's Stamford Church, representing the Christian ichtheological symbol.

Much more important and with a much greater possibility of lasting effect, I think, is the contribution of certain *imaginative engineers* to the New Sensualist movement. The mature, professional approach, typified by Felix Candela, and in a different way by Luigi Nervi, was expressed originally by their acknowledged master Torroja. Candela speaks of "intuitive principles not usually found in books and technical papers," Nervi insists on his "capacity to feel a structure in an intuitive way, as one feels a ratio of volumes or a color relationship." Or there are the more free, if completely mathematical, studies in *conspicuous compression and tension members* most strikingly typified by Buckminster Fuller's geodesic compositions (Plate 9). The concept that ties together all these engineering strivings and studies, it seems to me, is what Candela calls sterio-structure, a feeling that load transformations need not be considered as rigid, predictable, unimaginative forces, but as delightfully all-dimensional, free though controllable stresses which can act in any or *all* directions (Plate 10). And finally we come to the completely free, more *sculptural-architectural* structures that seek to tie together and make use of all these contributions – plasticity, visual delight, romanticism, and engineering imagination. Here we come to the great promise of the New Sensualism, and the great danger. Considering architecture as large-scale sculpture is not new in architectural history. Much of Baroque design in its high period was more sculpture than architecture. An important point needs to be made here. Architecture as sculpture implies – demands, rather – architects who are sculptors, or else it is going to fall flat on its face, figuratively if not literally. And I submit that very few architects, even among the greatest of those who are trying it, are competent at sculpture. The big problem now comes: what conclusions does one draw from all this? There seems to be an emotionalism in society itself that is being brought to the surface in many, sometimes very peculiar, ways.

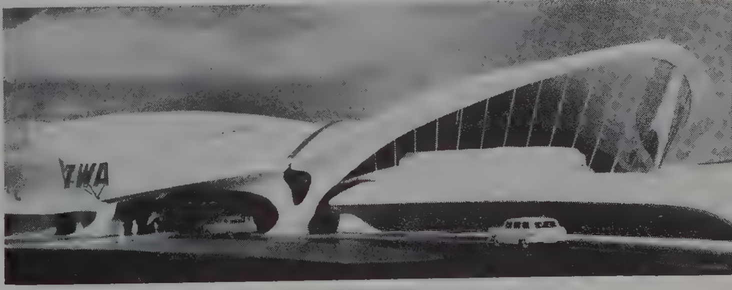
7. *"... most articulate of the 'delight' school ..."*





9. "...conspicuous tension and compression members..."

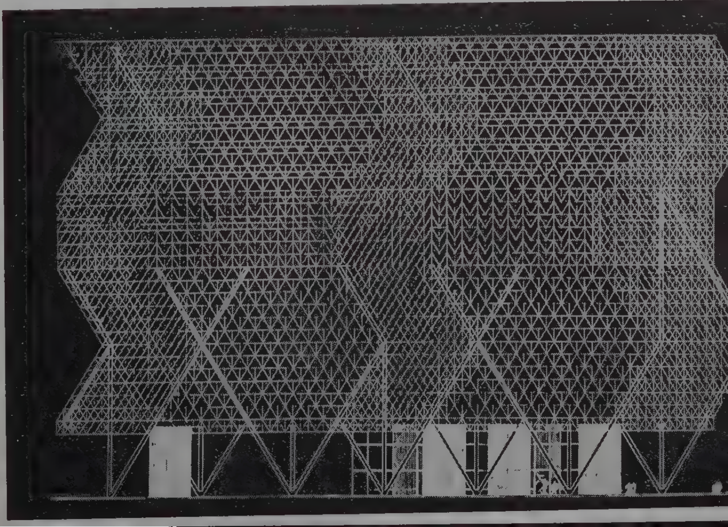
8. "...represent romantically an attitude — something in flight..."



So perhaps the restlessness in architecture which I have tried to picture *is* related to the mood — if not to the physical needs — of the community in which the architect works. Yet the great danger in the new work is its lack of imposed disciplines, the easy and obvious temptations to indulge in trickery and sensationalism.

But let me conclude with the optimistic point of view that along with the dangers have come freshness, imagination and inspiration. A new breath of creativity — a new search for the ages-old appeal to the senses of viewer and user — has enlivened the modern movement at a time when it had threatened to become stiff and to age too quickly.

10. "...free though controllable stresses..."



COMMENT ON NEW FEDERAL DPW FEE SCHEDULE

The revised schedule of architects' fees for Public Works commissions as published in the June 1960 issue of the *Journal* seems to me to establish a very fair and equitable rate which should satisfy architects all across Canada. The committee under the chairmanship of Mr Paine has done a very competent job and deserves the approbation of the profession at large. In general, and except for the very large projects, the fee schedule has been considerably raised. In the case of the very large projects I think it is quite justified to slide the scale downward—and still the compensation will be adequate—this seems to comply with the general method prevailing in the USA.

Clause "g", that the Government will pay for inspection costs, is a most important advantage, especially in the case of smaller commissions. We have found in the past, in the case of a small Public Works commission some distance from the architects' office, that it was impossible to accept such a commission without a loss to the office, where the cost of a clerk of works had to be included in the fee of 5%! Now that the fee has been increased and the Government also pays the clerk of works' salary, such smaller commissions can be taken on with the prospect of a fair return for the effort—which is much better both for the architects as well as Public Works.

H. H. G. Moody, Winnipeg

I was very interested indeed to see the new schedule of fees for the Federal Department of Public Works in the June issue of the *Journal.*

The new schedule is certainly far better for the profession and is particularly important due to the influence of the Federal Department scale on the scale of fees of the Provincial Departments of Public Works.

In view of the services which the Department renders, and their decision to pay for the cost of the resident inspector, it would appear that this new schedule is a great step forward for the profession, even though in some particulars it does not match the return of private enterprise.

While some differences between the scale of fees listed as minimum by various provincial engineering and consulting engineering associations and the Federal scale need reconciliation, it should not be too difficult on the new base to arrive at a scale satisfactory to both parties, and, I believe it safe to assume that the associations affected will seriously consider the adjustments necessary.

A point to which the architects should give serious consideration is clause "f" of the schedule which outlines a graduated fee with a reduction at a level of two million dollars of construction and a further reduction at a level of five million dollars of construction. Graduated fees have been used by the engineering associations for some time, though they have included far more steps than has the Department.

C. A. E. Fowler, Halifax

As a member for many years of the special Committee set up by the RAIC to deal with the Department of Public Works in the matter of obtaining relief for the members of the Royal Institute from the unrealistic scale of fees paid by the Department to the architects employed by the Department, I am of course pleased to know that some favourable consideration of the matter has at last been forthcoming from the Treasury Board and the DPW.

The fact that the relief granted was not equal to that asked for does, however, raise the question as to whether the RAIC should be satisfied for its members to remain under a handicap in respect to the fees forthcoming for work done for the DPW, when such fees are compared with those which would be paid for the same work by a private client, whether an individual or a corporation.

For example, under the DPW schedule, for a building of the type described in Clause "a" or in Clause "d" of the "New Scale" as published in the June 1960 issue of the *Journal,* the architect will receive a fee of 5½ per cent of the cost, provided the cost does not exceed $2,000,000. This fee covers payment for all planning and administrative services of his own and his consultants' offices, and would be $110,000.00 on a $2,000,000 cost. If the building were for another client the fee, in most of the Provinces, would be a minimum of $120,000. It is very doubtful that any contribution made by the Department to the development of the plans, which would not be made by another client, would ever reduce the cost of the architect's outlay upon the work by $10,000.

Clause "f" of the "New Scale" seems to be quite ambiguous in its meaning. An effort should be made to have the meaning clarified promptly.

This clause states that only on projects up to $2,000,000 in cost shall the fees set forth for each type of building apply. *"Over $2,000,000, the fee will reduce by ½ of 1% and will hold up to $5,000,000 in value of cost of project".* (quoted from the text.) Does this mean that the fee *on projects costing over $2,000,000 the whole fee* will be reduced by ½ of 1%, or is it that the reduction in fees will take place *only for the cost in excess of $2,000,000?* If the first of these interpretations is correct, the fees on a building to cost $2,000,000 will be $110,000. Should, by chance, the total cost turn out to be $2,001,000 the fees will be $100,050, or $9,950 less than if the cost had been an exact $2,000,000.

During negotiations with the Department, an anomalous situation such as this was pointed out for correction.

The Membership will be relieved to know that after much discussion the Department has at last agreed to pay the architect, in addition to his fees, the out-of-pocket expenses incurred for travelling and for employing a clerk of the works. In the past these expenses have been onerous, and in certain cases are known to have exceeded twenty per cent of the total fee received.

In respect to Clause "j", is it not a serious departure from accepted practice in the English-speaking world at least, for the architect to be required at completion to hand over *"all original drawings* of the architectural, structural, mechanical and electrical portions of the work"?

Then there is the stipulation that unless these original plans are delivered in *satisfactory condition to the Department,* one's final payment of fees can be withheld.

In bringing these comments to an end I cannot but comment upon the lack of prominence that was given by the *Journal* to this important matter in the June 1960 issue. One might have expected that a document such as this Fee Schedule for which the Executive Committee had worked for many years, would have at least been given a page to itself with an appropriate heading rather than to have formed a sub-item of "Institute News" with one-third of a column on one page and the remainder on one of the back pages.

A. J. C. Paine, Montreal

Book Reviews

"ARCHITECTURAL RENDERING" by Albert O. Halse. Published by F. W. Dodge Corporation. 277 pages. Price $15.75.

A well organized and profusely illustrated treatise on the subject. Each example of a rendering technique is discussed and each step in its production painstakingly described.

The omission of examples of Aplique rendering is unfortunate in this exhaustive work. More emphasis on simple pencil techniques would be welcome for the average architectural office.

This is not the sort of book to take home for an evening's perusal but well deserves a place on your reference shelf.

John G. Wasteneys, Toronto

"ENGLISH DECORATIVE IRONWORK 1610: 1836": by John Harris; published by Tiranti, 42/–

Mr Harris and his publisher have produced a beautiful book being a collection of drawings and pattern books including works of Tijou, Jones and other great iron workers. The book itself is a pleasure to hold and to study and should find a place as a reference in many libraries. It is doubtful whether it will answer a need, as the author hopes, for those who would revive or stimulate the craft for the embellishment of modern buildings. The extraordinary richness of most examples will hardly find an echo in an age of austerity. That, however, does not lessen the value of the book as an ornament in a specialized library.

E.R.A.

"THE SOUTH BUILDS" by Edward Waugh, AIA, ARIBA, & Elizabeth Waugh. Publisher: The University of North Carolina Press, Chapel Hill, N.C. Price $12.50.

The introductory chapter of *The South Builds* contains an absorbing inquiry into the heritage of the architecture of the South. Unfortunately, the chapter confuses subjective and objective inquiry in an uneven, and far too condensed commentary. However, the forthright criticism of the past and present relationship of architectural education and the profession at large, is a welcome device not as yet apparent in Canadian architectural writing.

The dilemma of current architectural publications can be seen in this text-plus-pictorial survey. For whom are we preparing these publications? If it is for the professional architect, educator or student, *The South Builds* suffers from a serious lack of technical and definitive data both as to the present and the past. One never feels the sense of climate, typography and idiom of the South. The layman will find the terminology abstruse and confusing.

It must be said that one wishes that a similar comprehensive publication would appear on Canadian architecture, conditioned to a deeper and more definitive appraisal.

The publication points out to this reviewer two important facts--one, the realization that the most significant structures are by "Ex-Southerners", or "New Southerners" with above average ability. Secondly, the strong idiom of the South has not been captured by the contemporary architect, except fleetingly in his isolated residential design.

The South Builds might serve to remind us that whether it is "red corpuscled" Wright, or "white corpuscled" Mies, – either must be of sufficient quality and intensity to be of immediate or continuing value.

A. J. Donahue, Winnipeg

"AMERICAN BUILDING ART — THE NINETEENTH CENTURY" by Carl W. Condit. Published by New York, Oxford University Press. 351 pages, 139 figs. Price $12.50.

In the abrupt phrase "History is bunk" Henry Ford summed up the pragmatic workaday philosophy of generations of technologists and engineers. In the nineteenth century, a century which was the first to see the rise of a theory and philosophy of history, the engineer, the inventor, the practical men who made and devised gadgets and structures were, for the large part, illiterate barbarians quite unaware of the long chain of circumstance which made possible their technical innovations. Without an understanding of past achievement they were unable to predict the effect upon man of their inventions. The result was the harsh primitive and brutal environment of the early industrial age. This curious "flatland" of design, in which the dimension of time is absent, in which the object is divorced from its social context, remains the norm for the practical designer of today, whether he be architect, engineer or technician.

Today there is little excuse for this lack of historical perspective. In no small part, due to the example of the brilliant oversimplifications of Siegfried Giedion in his "Mechanization Takes Command", a generation of scholars and historians is engaged in picking over the tattered record of nineteenth century technology. Drawing upon the anonymous, often banal, items of technology, an interdependent pattern of technical invention is beginning to emerge. As Professor Condit states, "There is generally sufficient evidence to warrant the view that the evolution of building techniques, like other inventive and creative activities is an organic process. Technical invention reveals the same characteristic. It produces a long series of mutations rather than a few original creations. For every apparently new thing there is a precedent." This orthogenesis of structural form, in which each solution leads the way to the next is the key to the understanding of the design process. I can recommend every designer to read the account of the evolution of the bridge truss in Professor Condit's text. Here, from the primitive sources in timber to the final phases in wrought iron and steel is a brilliant summation of this process of mutation upon a theme.

One could wish that the range of the study were not limited to the American scene. Although Condit has indicated the critical role of European mathematical analysis in the works of Gauthey, Euler, Lame and Coulomb insufficient explanation of their insights weakens the argument of a change from pragmatic carpentry to analytic calculation. Again, if the book is aimed at the non-specialist, the footnotes without illustration, describing the basic structural systems are inadequate. One feels the lack of a brief recapitulation of the essential unity of all structural systems, such as that so brilliantly presented by Paul Wisnicki at Banff Session '60, particularly where this is to be the first of a series. I am surprised that Oxford Press who achieved such uniform excellence in the illustrations to the History of Technology series, would countenance such wretched half-tone reproductions as are used in this volume. Despite the inconvenience and added cost it would have been far better to reproduce these rare illustrations on coated stock. The use of crude diagrams taken from H. C. Tyrell's "History of Bridge Engineering" stands in glaring contrast to the exquisite detail of the early patent drawings. Despite these regrettable lapses on the part of the publisher, this book is a must for any designer who would understand the present state of structural knowledge.

J. H. Acland, Toronto

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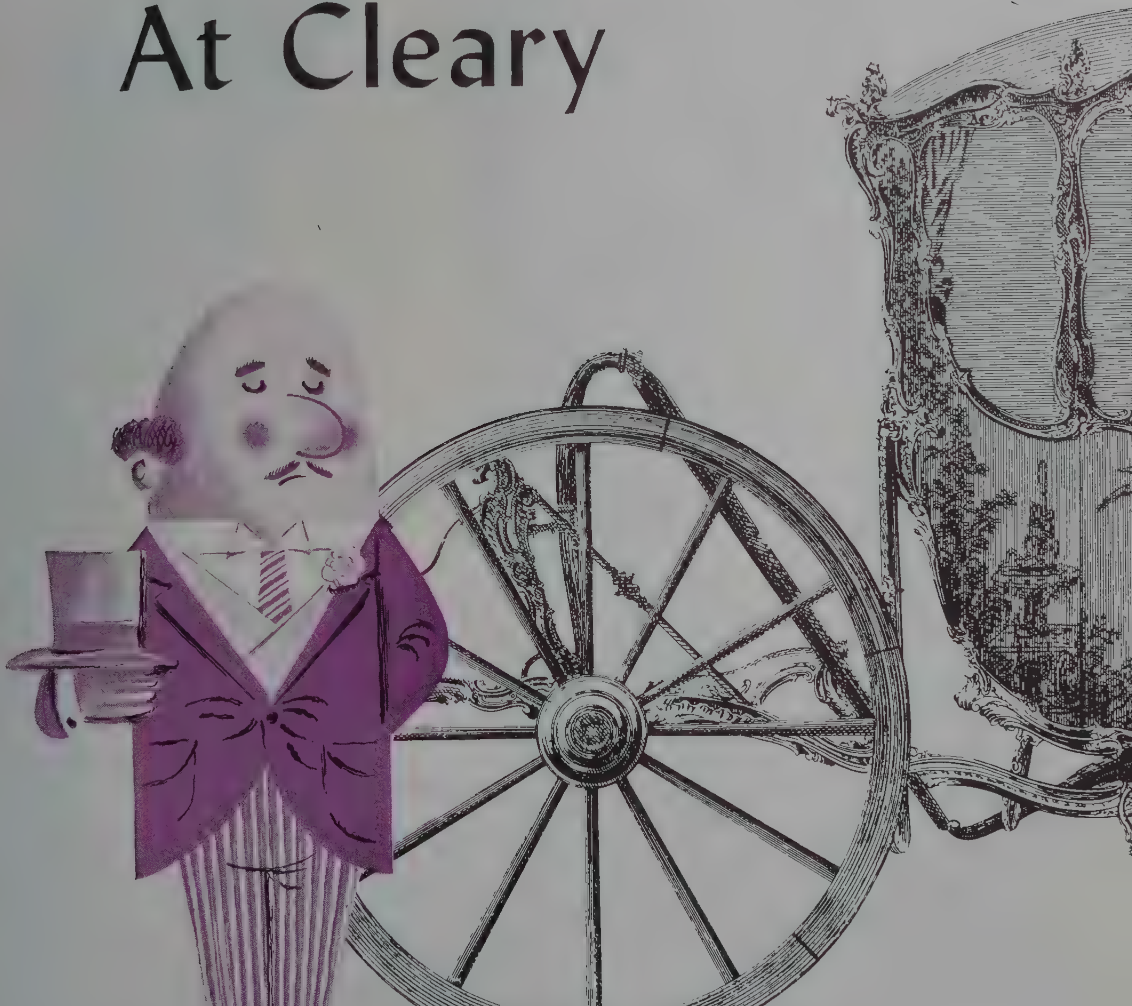
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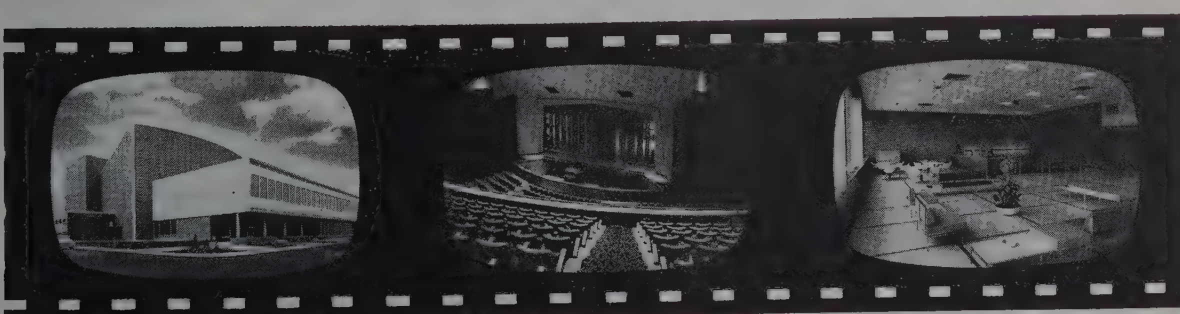
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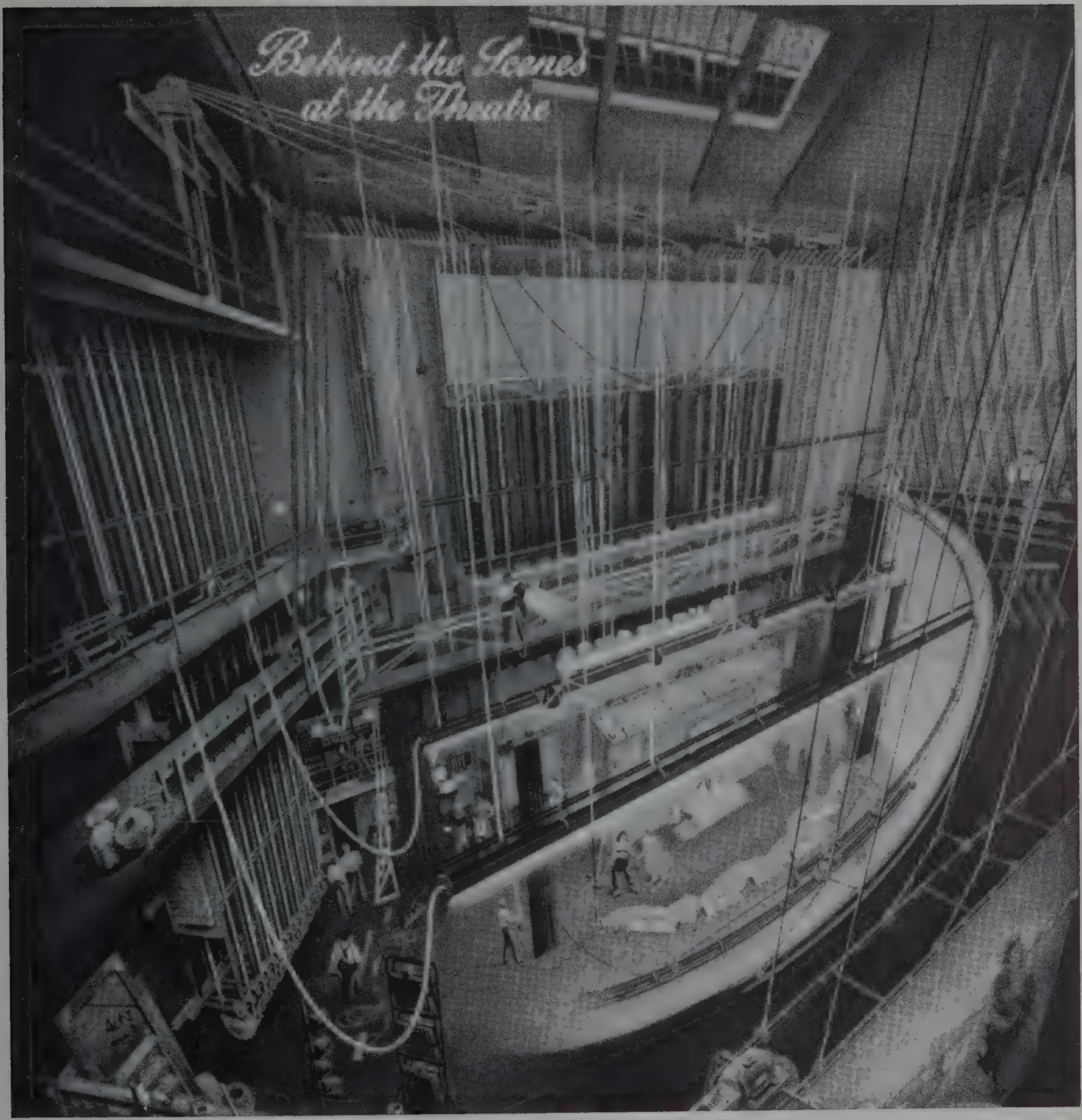
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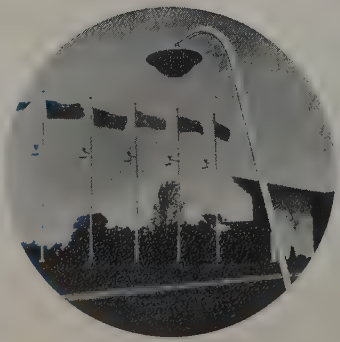
EXHIBIT BUILDING, The Thousand Islands, Ontario.

Architect	H. H. ROBERTS, M.R.A.I.C., Westport, Ontario.
General Contractor	TOWER COMPANY LIMITED, Montreal, Quebec.
Electrical Contractor	G. COLIGAN, Prescott, Ontario.

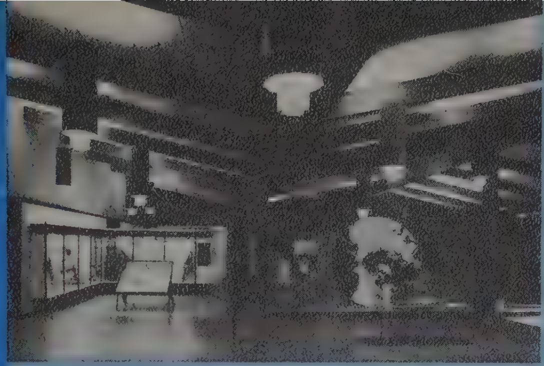


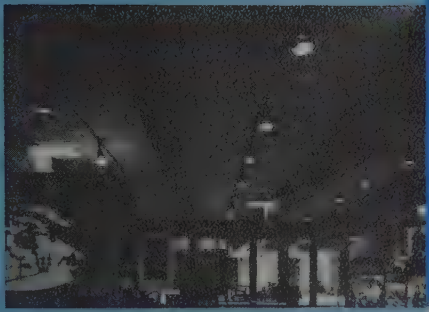
The Exhibit Building at the new Hill Island Development at the Thousand Islands, Ontario is part of a 350-acre resort area which is presently being developed by International Resort Facilities Limited. As part of the initial development, the Exhibit Building and its lighting indicate the modern concept that will be applied throughout the area. An interesting variety of lighting equipment is used to illuminate this building and surrounding area, with each unit selected to provide the *right* light at the *right* place and to complement each other. All of the lighting equipment, including lamps, was supplied through the Northern Electric lighting service. The products of many leading illumination manufacturers are conveniently available from Northern Electric and our lighting specialists will gladly assist you in the planning of efficient indoor and outdoor lighting systems.













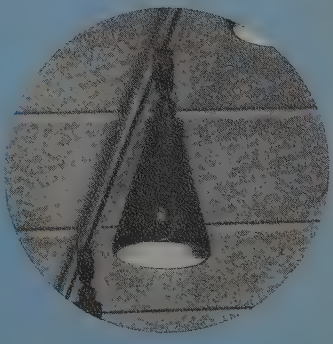
The interior of the building is complemented by colourful "super hi-lite" units suspended from the ceiling. In another section, a modern, flexible lighting system is provided through the use of lighting duct and cone-shaped fixtures containing reflector spotlights.



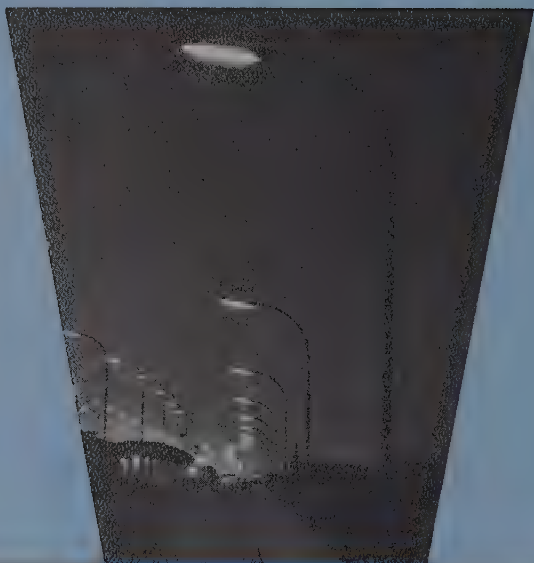
The exterior of the building is strikingly illuminated with sodium floodlights and large twin cone fixtures. Twin cone fixtures mounted on aluminium flagpoles illuminate the flags and the immediate approach to the building. Decorative luminaires and standards are used to illuminate walkways and landscaped areas.







ONE SOURCE OF SUPPLY FOR THE MANY SOURCES OF LIGHT



Northern Electric can supply quality equipment to meet all lighting objectives, whether your need is for the illumination of commercial or industrial buildings, shopping centres, streets and sidewalks, park areas or sports stadiums.

A single call to your nearest Northern Electric office will give you immediate access to information on the technical aspects and availability of the products of most of the leading illumination manufacturers.





Use the **NORTHERN ELECTRIC *LIGHTING SERVICE***

— our lighting specialists will be pleased to assist in the planning of any interior or exterior lighting layout.

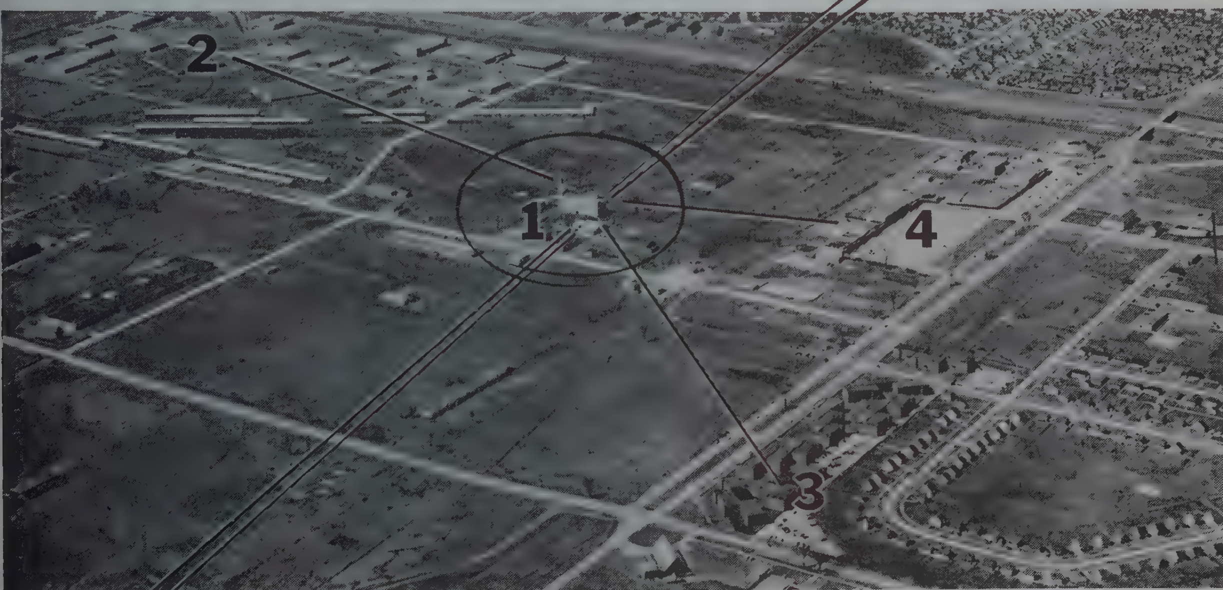
Northern Electric

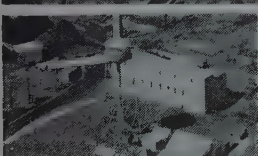
COMPANY LIMITED

How to pull Industry and Commerce to a Planned Townsite and/or Industrial Park

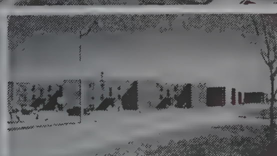
LOW COST Central Heating

For factories · Shopping Plazas · Apartment Blocks · Schools · Churches











1 Located centrally in the Ajax Development this "furnace" is capable of supplying plentiful heat—or steam—to buildings within 2-mile radius with total coverage of over 16 square miles

2 "Main Street" is a happy street for factories at Ajax because there is no need for outlay in individual boiler-rooms. Over 20 factories are saving by using the central heat facilities.

3 "$12,000 added to net profits" (savings equal to 6% on an investment of $200,000) that's what central-heat means to the owners of the Ajax Apartment Development pictured here.

4 No capital cost of boiler-room—no labour cost—no boiler room maintenance or repair for shops in this 45 unit Plaza—at Ajax—using the central heat service. Pipes are underground immediately available.

*AJAX, ONTARIO... *has central heating plant which wipes out capital boiler room cost and all labour costs completely for scores of users—manufacturing and commercial plants, stores, apartment blocks, etc.*

The prime target in manufacturing must be to keep productivity high—and overhead low—if we, as Canadians, are to compete successfully. As Canada swings to an industrial economy more planned townsites like Ajax, Ontario, are developing with factories, commercial projects, plazas, homes, churches, schools, carefully, skilfully integrated by Canadian Architects and Engineers.

Into these ideal communities are being incorporated ultra-modern amenities and money-saving services. Central Heating is a notable example offering convenience, avoidance of capital and labour costs in individual heating plants, air-pollution control —and MONEY-SAVING resulting in lowered unit cost of all articles manufactured. Capable of burning any fuel these central heating plants can utilize whichever fuel is most economical.

Coal is—and will continue to be for decades to come—the most economical fuel in most communities. That's why it is the fuel used in the Ajax, Ontario Central Heating plant and most other central heating plants in this country. We suggest you investigate the Central Heating Plant Plan—for similar projects in your area.

**Ajax, Ontario is a planned community developed by Duffins Creek Estates Limited—a company jointly owned by Perini Limited and Principal Investments Limited.*

"Here's what central heating means to Commerce and Industry in Ajax" says Gordon Gilchrist . . . Chief Engineer at Ajax Heating Plant.

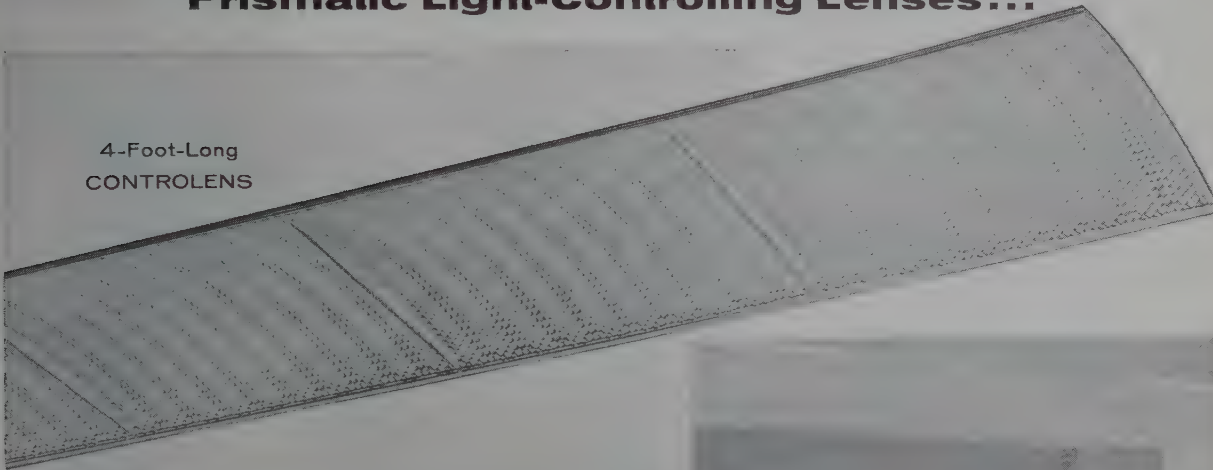


"Our plant at Ajax is adaptable to burning any fuel—oil, gas or coal—whichever will allow us to deliver heat or process steam cheapest to our customers. In this area nothing can equal coal for low cost so coal's the fuel we buy. With our modern stokers and ash-handling equipment one fuel is the same as any other as far as manpower is concerned."

For further information or additional case histories showing how other plants have saved money burning coal the modern way, write to Bituminous Coal Institute of Canada at 159 Bay Street, Toronto 1.

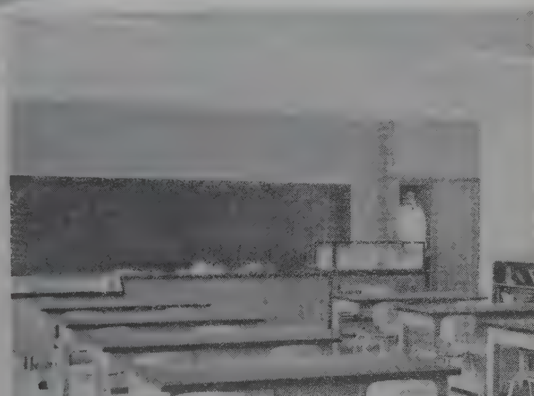
Where costs count—Coal is the fuel BCI **BITUMINOUS COAL INSTITUTE OF CANADA**

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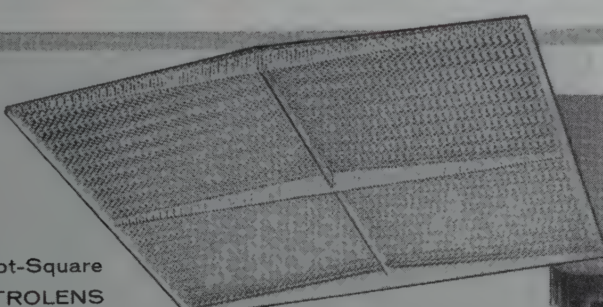
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PLEXIGLAS

IN ARCHITECTURE

ARCHITECTURAL CHARACTERISTICS

In colorless form, Plexiglas is as transparent as the finest optical glass. It is also manufactured in a complete range of transparent and translucent colors. Outstanding characteristics: transparency, outdoor stability, light transmission, light diffusion, luminous color effects, glare reduction, breakage resistance, light weight, versatility.

ARCHITECTURAL APPLICATIONS

Rohm & Haas Company of Canada, Limited sells Plexiglas acrylic plastic sheets and molding powders. These are formed, fabricated, molded and assembled by other manufacturers.

Architectural applications for Plexiglas are in two categories — Standard Building Products, and Custom Designed Applications.

STANDARD BUILDING PRODUCTS

Corrugated sheets
Daylight louver panels
Directional Signs
Dome skylights
Edge-lighted sculpture
Flat sheets
Formed panels
Lighted letter signs
Lighting equipment
Luminous ceilings
Shower enclosures
Store display fixtures: display stands, millinery and hat trees, counter dividers, drawer trays
Three-dimensional formed letters

The names of manufacturers, fabricators, and dealers handling specific types of standard Plexiglas products can be obtained from Rohm & Haas Company of Canada, Limited.

CUSTOM DESIGNED APPLICATIONS

Architectural signs
Custom display fixtures: display envelopes, show cases, tiered display shelves, wall display boxes
Formed windows
Hardware: door knobs, kick plates, light switch plates, splash plates, towel rings and racks
Interior decorative pieces: bowls, dishes, lamp bases, vases, interior-carved panels, embedded objets d'art
Luminous store fronts
Valance and soffit lighting shields and diffusers
Partitions
Sprandrel panels
Miscellaneous: models, blueprint cover, display cases, exhibit housings

TYPES OF PLEXIGLAS SHEETS

There are five types of Plexiglas sheets for architectural use:

Plexiglas Colorless
Plexiglass Colored
Plexiglas Patterned
Plexiglas 5009 Flame-Resistant
Plexiglas II UF (Ultra-violet absorbing at 375 Millimicrons)

SERVICES AND PUBLICATIONS

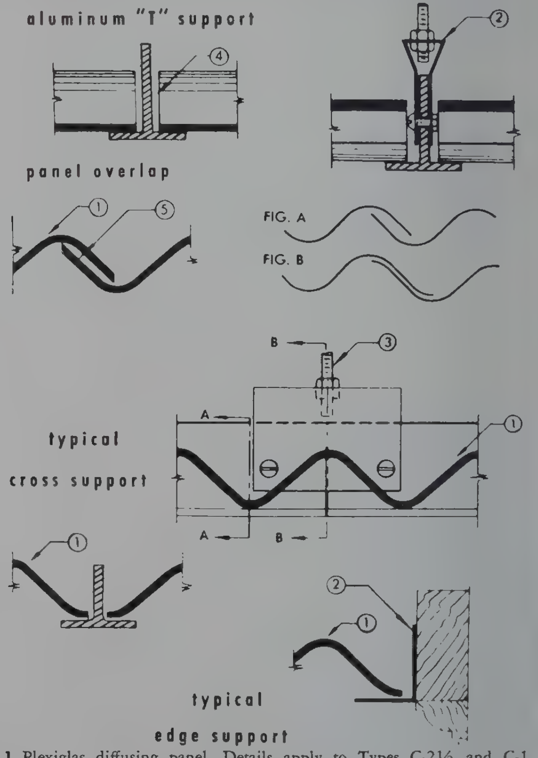
Technically trained field representatives will be glad to assist architects in the selection of the proper type of Plexiglas for specific applications, advise on problems of design and installation, and suggest sources of supply for standard building products and custom fabrication.

The services of Rohm & Haas Company of Canada, Limited field representatives are augmented by the staff of a design and fabrication laboratory where new applications for Plexiglas and new techniques in its fabrication and installation are studied and developed.

The following brochures and bulletins, indicated by title and code number, are available on request:

- Design and Fabrication Data (PL-28)
- Architectural lighting with Plexiglas (PL-202)
- Outdoor Lighting with Plexiglas (PL-242)
- Daylight Control with Louver Panels of Plexiglas (PL-226)
- Plexiglas Dome Skylights (PL-301)
- Plexiglas for Replacement Glazing (PL-251)
- Plexiglas for Architectural Signs (PL-306)
- Plexiglas for Signs (PL-287)
- Plexiglas Sign Manual (PL-231)

LUMINOUS CEILING SUPPORT DETAILS



1. Plexiglas diffusing panel. Details apply to Types C-2½ and C-1 corrugated sheet, formed coffer units and flat panels. Coffer units and C-2½ corrugated sheets need support in only one direction.
2. Brake formed sheet metal: Aluminum, stainless or coated steel. Unistrut support (series P-6000) may also be used.
3. .187″ diameter hanger rods, 36″ to 48″ o.c. Where supports are installed in one direction only, hangers should be braced above Plexiglas to prevent side play.
4. Expansion clearance of 1/32″ per foot of panel dimension parallel to corrugation should be provided for a temperature rise of 50°F.
5. Where minimum shadow is desired Fig. A (open gap) is recommended for joints parallel to corrugations. This method also maintains the lapped panels in the same plane at the joints. Otherwise, panels may be lapped without 3/8″ edge trim as in Fig. B.

Chemicals for Industry

ROHM & HAAS COMPANY OF CANADA LIMITED

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- **Completely sealed unit**
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- **Choose the insulation you prefer**

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MADE IN CANADA



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RIXSON *automatic* **door operators**

Installed in the rigid floor, completely concealed, and electrically actuated to safely and silently open and close the door by hydraulic power — no springs. Actuated by floor mat or many other switching means.

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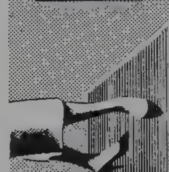
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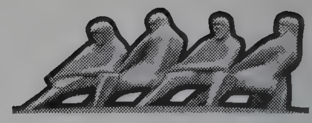


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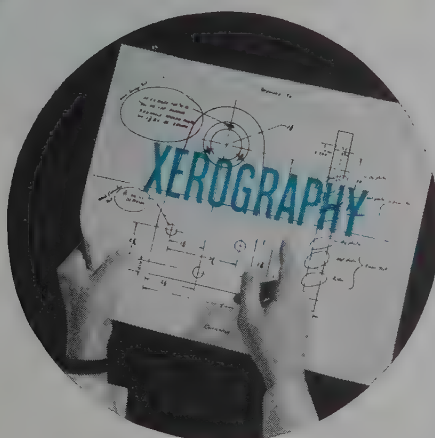
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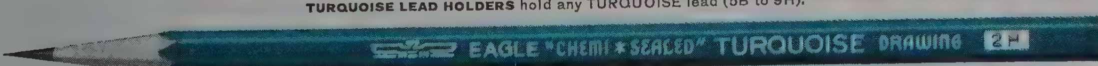




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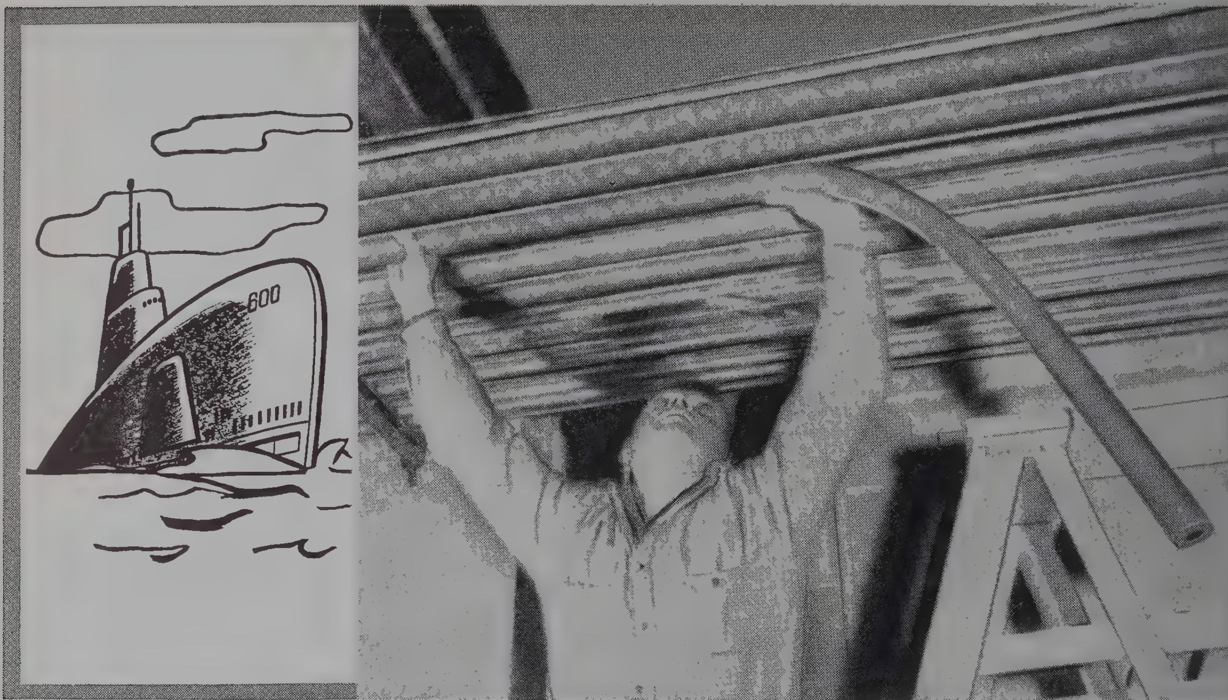
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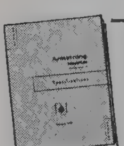
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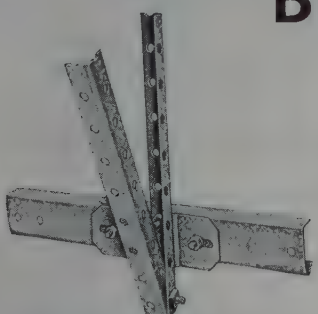
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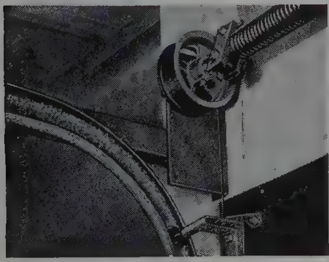
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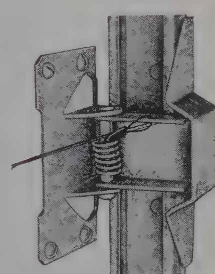
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Bottom Roller Bracket with cable clamping device allows cable adjustment at floor level.

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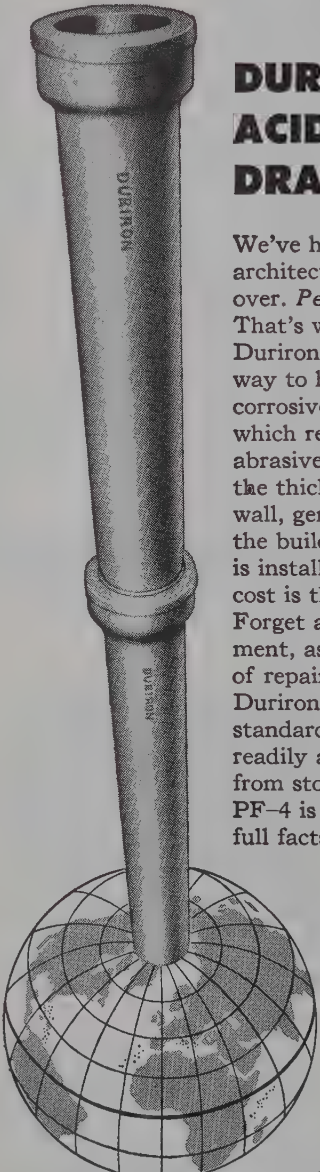


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solution for corrosive waste disposal



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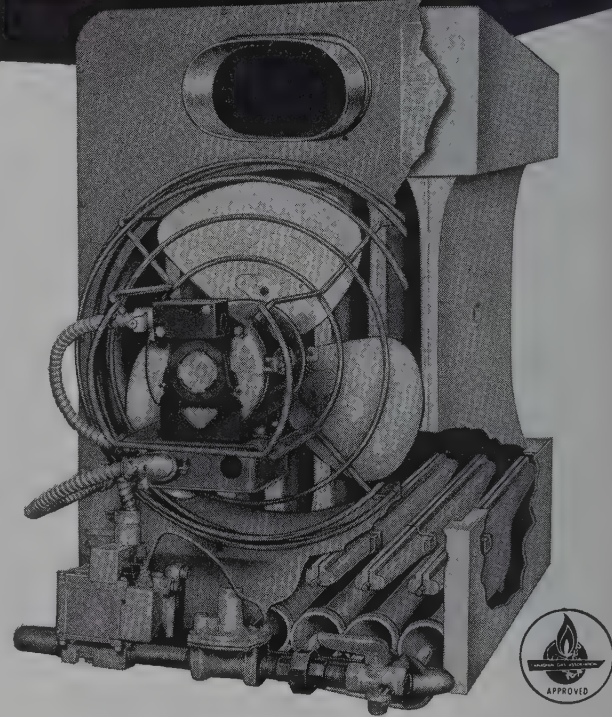
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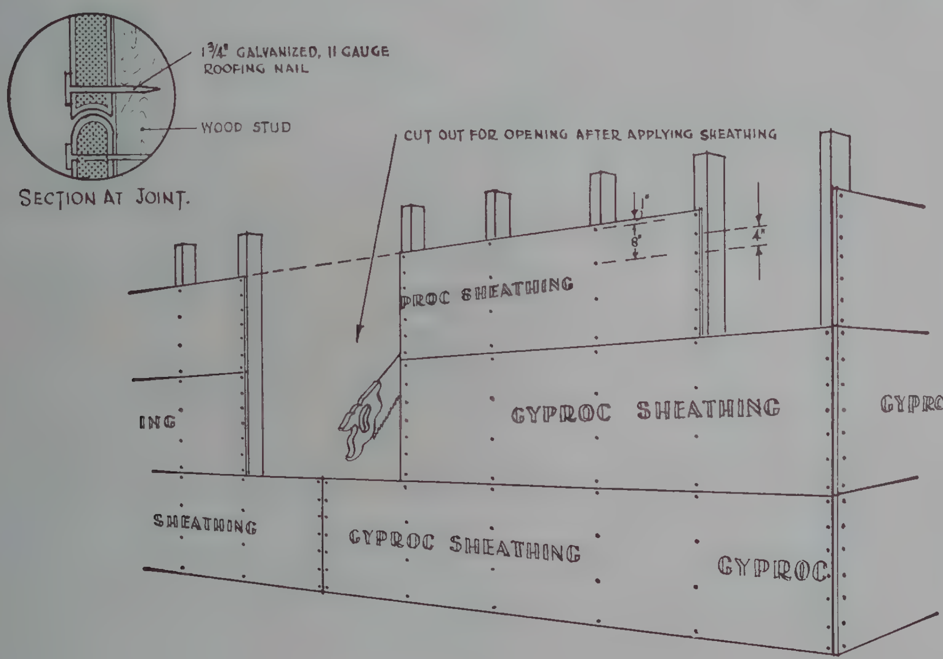
SUBJECT GYPROC SHEATHING

GS-1

A.I.A. FILE 19D-3

GYPROC TECHNI-NOTES

PUBLISHED BY GYPSUM, LIME & ALABASTINE LIMITED



THE CORRECT APPLICATION OF GYPROC SHEATHING

- nail at end joints with 7 nails (4″ centres)
- nail to intermediate studs with 4 nails (8″ centres)
- fit board to openings and corners by scoring and snapping off surplus
- butt joints to moderate contact; with end joints staggered, and with rounded edge up
- cut out openings later

NOTE:

Copies of GYPROC Techni-Notes are available on request. Check subjects of interest: ☐ Gypsum Lathing; ☐ Plaster Stops; ☐ Ceiling Construction; ☐ Gyproc Wallboard; ☐ Crystalite Exterior Stucco; ☐ Masonry Mortar; ☐ Exterior Sheathing; ☐ Mineral Wool Insulation. Write or call GYPSUM, LIME & ALABASTINE LIMITED, Vancouver, Calgary, Winnipeg, Toronto, Montreal or Windsor, N.S.



COMING EVENTS

September 25—October 6, 1960
International Union of Architects
International Seminar on the Training of the Architect
University of Chile, Santiago

October 5-7, 1960
39th Annual Meeting
Producers' Council Incorporated
Drake Hotel, Chicago

October 11-14, 1960
Annual Convention
Architectural Woodwork Institute
Sheraton-Park Hotel, Washington, DC

October 17-20, 1960
Annual Convention
Canadian Good Roads Assn
Royal York Hotel, Toronto

October 23-26, 1960
Community Planning Association of Canada
Sheraton-Connaught Hotel, Hamilton

November 14-16, 1960
Annual Convention
Structural Clay Products Institute
Diplomat Hotel, Hollywood, Florida

January 14, 1961
Annual Meeting
Manitoba Association of Architects
Fort Garry Hotel, Winnipeg

January 27-28, 1961
Annual Meeting
Alberta Association of Architects
Macdonald Hotel, Edmonton

January 27-28, 1961
Annual Meeting
Prov. Quebec Assn of Architects
Quebec City

February 9-11, 1961
Annual Meeting
Ontario Association of Architects
Royal York Hotel, Toronto

May 17-20, 1961
RAIC 54th Annual Assembly
Chateau Frontenac, Quebec

July 3-7, 1961
VIth Congress
International Union of Architects
London, Eng. (Registrations, RIBA)

New Fluorescent Fixture

A new 4′ x 4′ surface mounted fluorescent fixture designated "Luminaire 62" is announced by the Holophane Co, Ltd, 418 Kipling Ave S, Toronto 18. "Luminaire 62" is a totally luminous fixture consisting of Holophane Prismalume Controlens; Fiberglo trans-illuminated side panels and Prismatic "T" bar, which combine without metal framing to provide maximum utilization of light with visual comfort, and to expose a maximum of illuminated area to view while providing an upward component of light that reduces harsh ceiling to luminaire contrast.

Pilkington Announces "Vista" Glass

Pilkington Glass Limited have announced that a green in-the-glass line called "Vista" has been added to the Thinlite Curtain Wall System which they distribute in Canada. Other basic panels in the system are available in white and transparent colorless glass.

"Vista", a transparent green glass, is made by a new process developed by Owens-Illinois at Toledo. It permits green glass and colorless glass to be drawn simultaneously from the furnace. There is no additional price for the new "Vista" type.

New All Metal Thread Screw Anchor

Rawlplug Products (Canada) Ltd have introduced into Canada a new all-metal thread screw anchor, "Rawlset", for heat and waterproof fastenings into brick, concrete, metal and wood. The "Rawlset" consists of a tough brass shell, threaded internally to receive a 3/16" screw and knurled externally to give extra grip when tightened into position. The shell is split at one end into four sections and contains a special aluminum expander, shaped so that when the screw is driven in, the sections expand and grip the sides of the hole firmly. In addition, the expander is designed so that it locks in position when the shell is securely fixed in the hole and, in effect, becomes a metal socket. Further information is available from the Company at 7320 Upper Lachine Road, Montreal 28.

◇

American-Standard Announces New Boiler Series

A new series of steel boilers especially developed for fast, low-cost residential installation is being offered by American-Standard Products (Canada) Limited, 1201 Dupont Street, Toronto 4. (Bulletin No. 6201–April 60). The new 320 series boiler for oil-fired residential hot water heating units comes as a completely packaged unit. CSA-approves, it is available in five sizes, net E.D.R. 365-850. Features include spinner blades in fire tubes, circulator, 22-gauge steel jacket, fibre glass insulation, stainless steel combustion chamber with refractory bottom, Arcoflame Oil Burner, pre-wiring and optional tankless domestic water heater.

◇

New Pozzolith Booklet

A new 20-page publication (MBR-P-14) describing and illustrating the use of Pozzolith lightweight aggregate concrete in 13 construction projects is available from Master Builders Company Ltd, Toronto 15.

◇

Folding Partitions in Wood Veneers

A folding partition that combines new panel dimensions of 10 ⅜" x 1 1/16" with natural wood veneers has been introduced by the Rolscreen Co, Pella, Iowa. The new partitions can be installed as space dividers in openings of any width and height up to 20′ 1″. They are available factory-finished or unfinished in birch, walnut, ash, oak, Philippine mahogany and pine. The units glide on ball bearing rollers on a steel ceiling track. Stacking space is about 1½" per foot of opening width.

◇

New Celwood Catalogues

Celwood Industries Ltd, P.O. Box 70, Abbotsford, BC, have issued two new catalogues: the first, which includes text data, on Pierson Sashless Windows; and the second, in color, on Celwood Folding Doors.

Holophane Announces New Luminaire

The Holophane Company, Ltd, has developed a newly styled luminaire known as the 665 series, for application in supermarkets, gymnasiums, auditoriums, warehouses, industrial utility areas, steel mills, generating stations. The unit (200 to 500 watts) is said to combine simple attractive styling with high efficiency, trouble free operation and the easy maintenance of smooth prismatic glass reflectors. Available in three distinct distributions of light, wide, medium, concentrating,the luminaire is easily relamped direct from the floor with a pole type lamp changer.

◇

New Hager Hinge

A new butt hinge designed, it is claimed, to cut mortising time in half, has been announced by the C. Hager and Sons Hinge Manufacturing Co, 136 Ottawa St, Kitchener, Ont. The new hinge has rounded corners with a $\frac{5}{8}$″ radius and is available in two sizes, $3\frac{1}{2}$″ by $3\frac{1}{2}$″ and 4″ x 4″.

◇

New Steber Lighting Catalogue

A new 28-page condensed catalogue (No. CS-60-1) including net trade prices has been released by the Steber Manufacturing Co (Division of the Pyle-National Co), 33 Ingram Drive, Toronto. The new book contains illustrations and essential data on the complete Steber line of lighting equipment, including the following new products: (a) High Bay fixtures wtih new "Lectric-Lok" safety electrical disconnect; (b) a new line of Standard (RLM) and shallow dome reflectors with "Lectri-Lok" safety electrical disconnect; (c) all-aluminum Vaportite industrial lighting fixtures, with or without porcelain reflectors and/or cast aluminum guards (no tools required to relamp and clean); (d) recently announced "Series 5000" rear-lamped aluminum floodlights for sports and industrial application.

◇

New Louvers Combine Daylighting With Ventilation

Louvers that provide ventilation and at the same time transmit 80% to 85% of the visible light have been introduced by Robertson-Irwin Ltd, 411 Parkdale Ave North, Hamilton, Ont. The louver blades are of weather and corrosion-resistant Stypolight with an embossed finish in an aqua shade. Two types are available—a fixed type and an operating type. Frames of the latter are reinforced with 2″ galvanized channels.

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Dunham-Bush Fin-Vector Bulletin

A new data and engineering bulletin (HD3-10.1) on Fin-Vector Radiation has been published by Dunham-Bush (Canada) Ltd, 140 Wendell Ave, Weston, Ont. The bulletin should be filed in Section 3 of the Dunham-Bush Heating Catalogue.

New Fireproofing Plaster

Red Top Firecode plaster, a material designed for fireproofing lightweight structural steel construction, is announced by Canadian Gypsum Company, Ltd, 790 Bay St, Toronto 2. The new plaster is formulated for direct spray application to steel beams, columns and various types of steel deck units. The product offers a wide range of fire ratings, not only in length of time but also in type of deck to which the material may be applied. A ½" coat applied to the contours of a cellular steel floor, for example, provides a 2-hour fire rating. Fire ratings as high as 4 hours can be achieved with 2-coat applications, sprayed 1-¾" thick directly on steel beams or over beams caged with metal lath. The new plaster may also be used to fireproof under header ducts, electrical raceways and junction boxes in steel floor units.

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Air Conditioning Systems

Two new remote air conditioning systems with nominal capacities of 10 and 15 tons have been introduced by the Sturtevant Division of Canadian Westinghouse Company Ltd, Galt, Ont. The air-cooled units are applicable in large commercial installations such as supermarkets or in industrial plants. The outdoor sections, the condensing units, include high-capacity condenser coils located on each side of the unit. The coils are finned-tube-type with aluminum fins mechanically bonded to seamless copper tubing and are completely waterless in operation. With vertical discharge propeller fans, the outdoor sections offer a low silhouette for roof-top mounting. The units are equipped with twin compressor systems, each with a matching fan and coil unit, that can be turned on individually to give half-capacity operation for light cooling loads. In addition, the outdoor condensing units can be used separately with two 5-ton or 7½-ton fan and coil units to provide zone control if desired. A built-in time delay relay in these new systems permits step starting to meet electric utilities' starting limitations in certain areas. The indoor fan and coil units are of modular design for flexibility of application.

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Bituminous Fibre Pipe Manual

A new manual giving complete technical information on installation, capacities, test data and handling practice on No-Co-Rode bituminized fibre pipe is available from Murray-Brantford Limited, 957 Sun Life Building, Montreal, PQ.

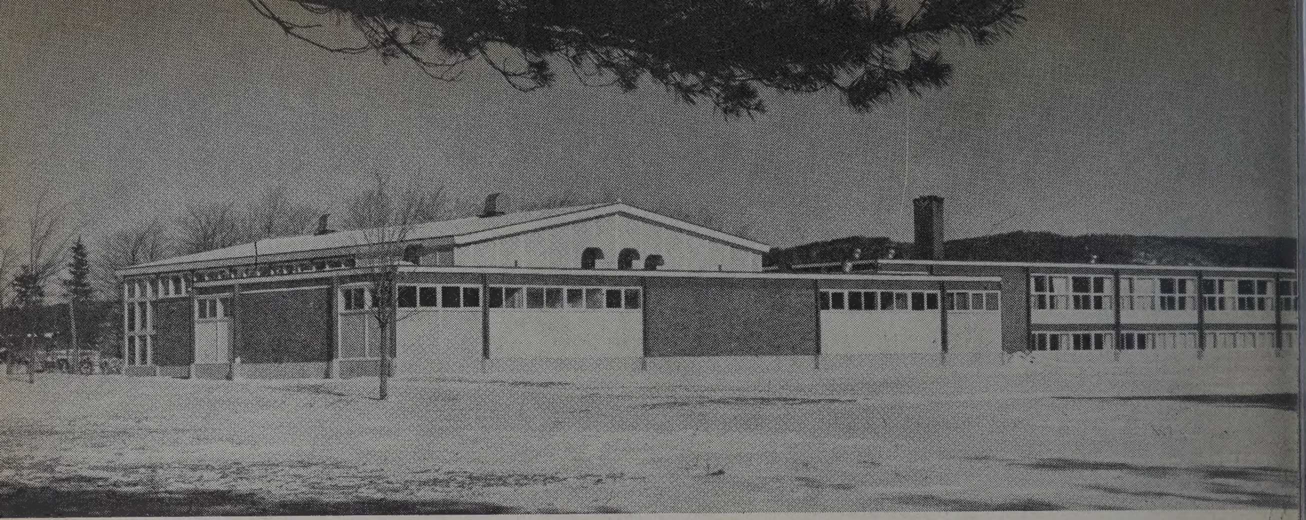
R-27 Silicone Water Repellents

Questions regarding performance, meeting of specifications, effectiveness and applications of above grade masonry water repellents made with Union Carbide R-27 Silicone are answered in a new brochure prepared by the Bakelite Division of Union Carbide Canada Limited, 123 Eglinton Ave E, Toronto 12.

New Stainless Steel Finishes

Atlas Steels, Welland, Ont, have produced a file folder card with samples of two new stainless steel finishes for interior and exterior architectural applications. Texdur 10 is a fine grain polished satin finish; and Texdur 11 is an embossed pattern finish. Both are available in widths up to 18", continuous coils, or flat lengths up to 16'.

INDEX TO JOURNAL ADVERTISERS



A variety of Rusco Prime Window types and sizes were used by architect Keith L. Graham to achieve distinctive design and functional advantages for Parrsboro's newest school. For ventilation, both lift-out, sliding panels and hopper types were used. In the auditorium, a plate-glass gable end runs right to the roof line.

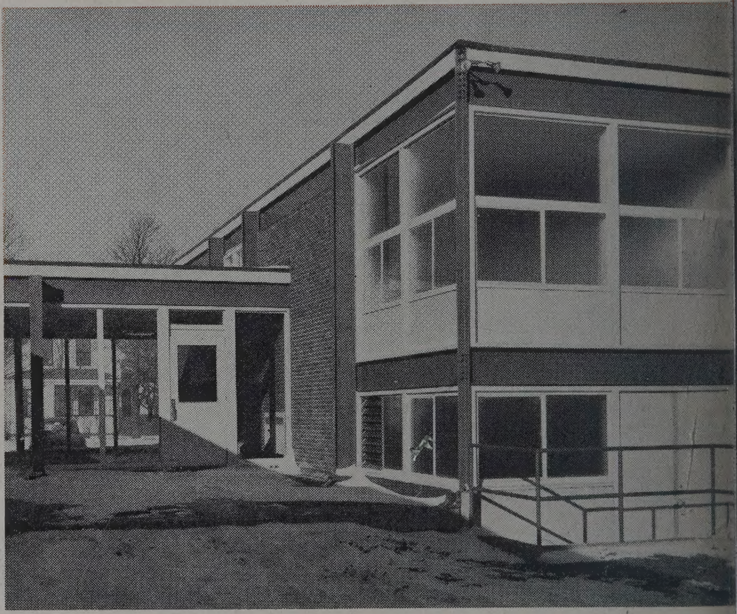
NEW SCHOOL FOR PARRSBORO, NOVA SCOTIA

ARCHITECT:
Keith L. Graham

The wide choice of window types and sizes, complete fabrication, and modern Slim-Line design were all factors in the choice of Rusco Prime Windows for this beautiful new school at Parrsboro, Nova Scotia.

Rusco's variety of fixed-light and ventilating window types gave complete flexibility in architectural design. Rusco's tubular steel sections permitted a freer use of glass without sacrificing structural strength. And, because the windows were delivered prefabricated for installation, the builders were able to close-in ahead of the cold weather, and save on installation time.

Rusco's baked-on decorator colors are another new dimensional beauty offered architects and builders from coast to coast.



Gleaming white, baked-enamel Rusco Slim-Line Windows were contrasted with the soft grey columns, pastel colored panels and brick for lasting beauty.

RUSCO
PRIME WINDOWS

RUSCO

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